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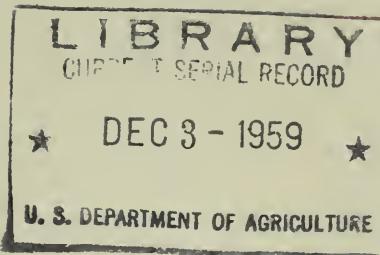
JUNE 1958

Veterinary

Administrator

Development

Program



Animal Disease Eradication Division
in cooperation with

Animal Inspection and Quarantine Division
AGRICULTURAL RESEARCH SERVICE

U. S. DEPARTMENT OF AGRICULTURE

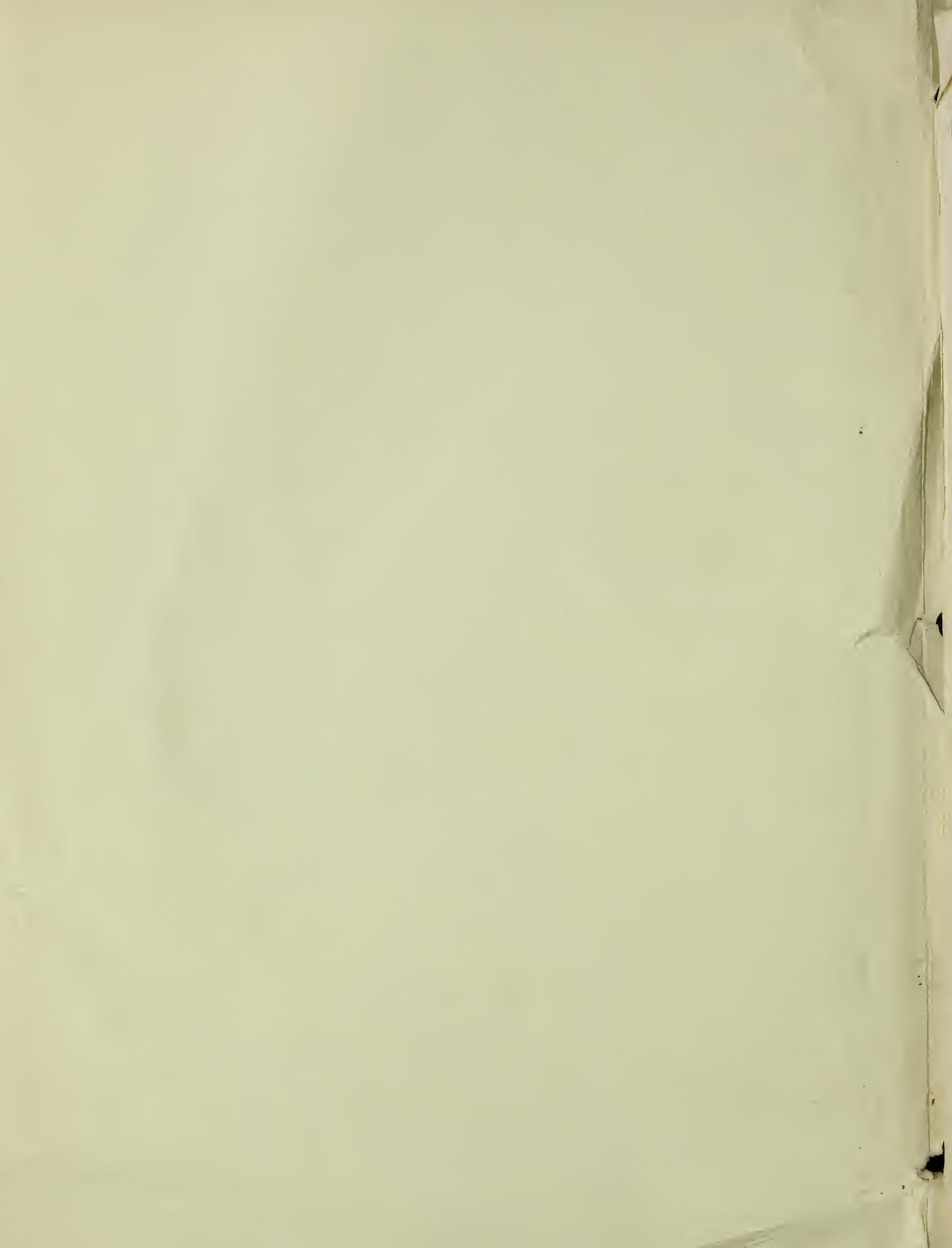


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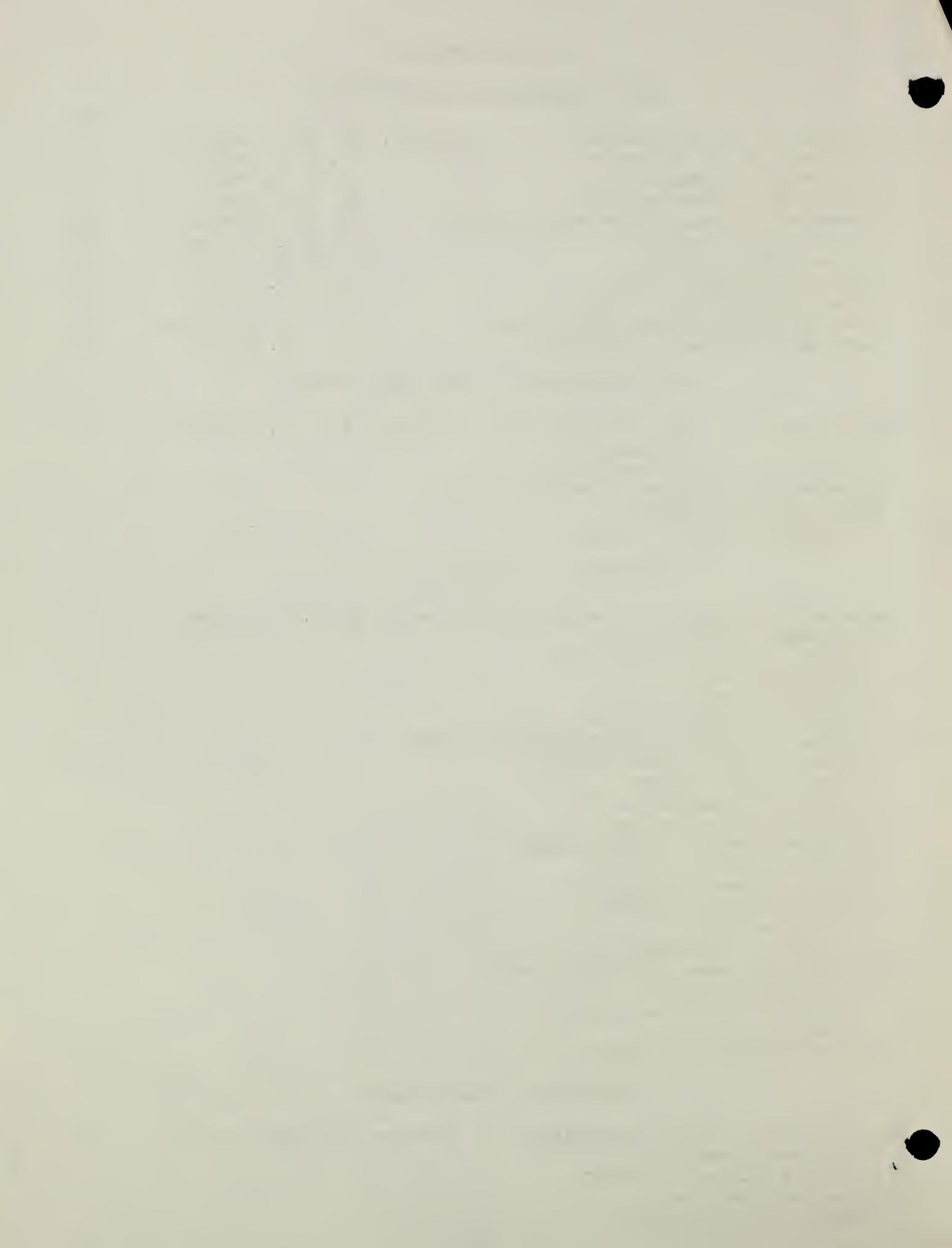
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ANIMAL DISEASE ERADICATION DIVISION

The activities of the Animal Disease Eradication Division are divided into two major categories:

(1) Administering laws and regulations pertaining to interstate movement of livestock and poultry to prevent the interstate spread of diseases. This is further divided into (a) controlled interstate movements from areas under quarantine within the State because of the existence of a specific disease condition; (b) inspection and supervision over the interstate movement of livestock to facilitate the uninterrupted movement and marketing of healthy livestock and poultry--this activity conducted at public stockyards; and (c) administering the 28-hour Law which provides for the supervision of livestock while in interstate commerce to prevent inhumane handling through over-confinement without feed, water, and rest, in excess of 28 hours by railroad or boats.

(2) Cooperation with the various States in programs of disease prevention, control, and eradication. Cooperative programs may be divided into three categories: (a) Those major disease programs for which appropriated funds are specifically earmarked, such as tuberculosis, brucellosis, scabies, and ticks; (b) programs providing for the eradication of minor outbreaks of incipient and potentially dangerous livestock and poultry diseases; and (c) emergency disease programs, such as vesicular exanthema and foot-and-mouth disease, which are financed from funds made available through the medium of the Commodity Credit Corporation or other funds that may be available to the Secretary.

The Secretary of Agriculture is authorized by Congress to carry out disease prevention, control, and eradication programs either independently or in cooperation with the various States. For the effective administration of the wide range of regulatory activities of the Animal Disease Eradication Division, it is imperative that those in charge of administering the program at the various levels from Washington on down to the area supervisors be thoroughly versed in each activity. The Veterinary Development Training Program is only one phase of the Division's program to develop its employees in the arts and sciences needed to accomplish its mission of protecting the great livestock and poultry industries of this country against costly domestic and foreign diseases.

ACTIVITIES OF THE VESICULAR EXANTHEMA ERADICATION SECTION

A few years ago, if you walked anywhere in the area of the B. A. I. offices, you would hear someone talking about Vesicular Exanthema. Papers carried articles about the disease and many farm magazines had feature stories relative to it. A large percentage of the mail, and legislative contacts with the Old Bureau, concerned it. Now it is in the background, and brucellosis is number one on the eradication parade. This is what we worked for, and all of us can be pretty proud of the progress made to date.

In contrast to offices where many people were as active as little beavers during the height of the epidemic, many now wonder what they are doing in that section. Well, every once in awhile the diagnosticians recognize there is still a program when they are routed out of bed to take a plane trip and look at some hogs that have a vesicular condition. Every vesicular condition in hogs is guilty of having vesicular exanthema until we can prove that it has not.

Let's review what is being done in this section. First of all, each year we retrace the achievements of the last twelve months and plan the goals for the next twelve months. If you follow the annual reports of the United States Livestock Sanitary Association you will find that the vesicular disease committee of which the staff official is a member, endorses the goals for the next twelve months on vesicular exanthema, foot-and-mouth disease, and vesicular stomatitis.

In looking back over the past several months, we can point with pride in adding New Jersey to the forty-six other States that have garbage-cooking laws. Such a development does not come about accidentally. It is due largely to the tenacious attitude of those in disease control in that State who keep pushing for progress in their programs.

An article recently appeared in Connecticut, the only State without a garbage-cooking law, which stated that they felt a bill requiring garbage to be cooked would be passed in the next session of legislature. This was the first knowledge of a breakthrough in that State. Once again the efforts of those in disease control are beginning to pay off.

Quite often those who are able to accomplish results in face of obstacles deserve far more credit than those who are able to do it with a lot less difficulty. For example, I believe the job of final eradication of tuberculosis should receive more credit than the job of reducing it to its present level. Getting the last man out can often be a backbreaking job, and the fellow without a firm conviction of completing the job just would not get it done.

Among the goals that we have established, the primary one is to urge States, which have the most hogs on raw garbage, to do something to correct it. We search for ways and means to try to eliminate, if at all possible, the last hog that will be fed raw garbage in this country. There are ways to this end; the challenge is up to us.

We recognize, for example, that the smaller feeder is a very large problem. During the past few years, an automatic fire burner was developed in which the individual could fill a Jerry can full of Kerosene and this was sufficient to adequately cook a fifty-five gallon drum of garbage. This eliminated the need for chopping wood or other type materials for fuel. In so doing, it reduced some of the opposition on the part of small feeders toward cooking the garbage. These and other similar ideas are being constantly searched for to protect and encourage the cooking of garbage in order to control this medium of spreading disease to our livestock.

We must constantly search for ways in which the disease may reappear and be looking for it, rather than to stick our head in the ground like an ostrich and hope that it will not appear. Some of our inspectors have been detailed from California to New Jersey in order to make sure that the experience gained in California inspecting infected animals during the past five or ten years could be passed on to the inspectors in New Jersey. We think this helped in finding our last outbreak.

The inspector in New Jersey deserves a great deal of credit because he found the disease, even though there were very few animals involved. We must look for ways to keep inspectors constantly on the alert; and recognize that complacency is one of the intangibles that we must overcome if we are going to have thorough inspection. Routinely visiting these premises every month can become very monotonous, so ideas are constantly being looked for to keep this interest alive, such as the "engineering hints" that are distributed by inspectors to the feeders and/or other type leaflets that gives the inspector a message to bring to the particular feeders, each time he makes an inspection.

All of these programs change from time to time. The number of amendments to the original Vesicular Exanthema Regulation is now listed as ninety-two, showing the changes that have taken place. In controlling the disease we have to adjust to the conditions, and as it becomes necessary, the regulations are changed by adding amendments that gives additional control when it is necessary and relaxes it when it is not.

We must keep abreast of all the developments in research that are being conducted on this and related diseases or in the field of nutrition, such as the nutritional studies on garbage as well as research conducted on the equipment used to heat treat garbage.

We must deal with the different agencies of the Government, especially those that have garbage disposal problems. This is particularly true of our military installations and institutions that exist throughout the country in many States.

We are called upon in the section to prepare papers for national meetings such as conventions, state veterinary medical associations, agricultural groups and instruction purposes or such as this current paper on the details of the programs. Many times we are asked to give papers relative to vesicular exanthema and other related diseases. It is necessary to be fully informed.

The day in which you could say that you did not know about a particular phase of the disease because that was "up to research or in someone else's field" is gone. Now, when you are handling the section activities of a particular disease problem you are expected by the industry to have the answers relative to the disease, and the latest information relative to it.

You are called on to develop visual aids to tell the story relative to the particular disease. As you know, we have the motion picture on vesicular exanthema. We made T. V. clips, also various flyers, graphs and charts, as we recognize this as the best means of keeping the industry properly informed.

Each year we are called on to give the budget requirements as to the money that will be needed to carry out the program. These estimates are requested two years in advance. This requires evaluating the program in each of the different States to determine how much money can be used most effectively, also allocate the money to states where it will do the most good and review its use throughout the year.

We appear before various types of meetings of the livestock industry, before State Veterinary Associations, before State Legislatures, before meetings of groups of our personnel within Agriculture, or specifically within our own Division, so that we can give a comprehensive picture of the current situation relative to the status of the disease.

EMERGENCY DISEASES

In addition to handling vesicular exanthema, the duties relative to the establishment of emergency disease programs, were given to the section. We have developed a proposed organization to handle the disease within each State. Naturally, any such model would have to be modified to meet variations required by different States. Emergency disease organizations established when there is not a particular emergency disease present is another difficult mission to accomplish, because it requires keeping interest alive. We can see this problem very vivid by the Civil Defense authorities throughout the country trying to stimulate our interest relative to protecting ourself against nuclear attack.

Emergency diseases consist of foreign diseases or domestic diseases that may take on the nature in which large numbers of animals would be attacked very readily, and have a serious affect upon the livestock economy of our

country. It is necessary to become acquainted with foreign diseases to determine what is necessary for diagnosis control and possible eradication. With the advent of rapid transportation, the threat of these diseases rises and falls with the incidence of the diseases in foreign countries.

We must have people trained to recognize these diseases in this country, so that any types of visual aids such as instructional slides and so on are developed and distributed. Regional meetings are held to discuss these diseases with field personnel in order to acquaint them with their significance, also the need for prompt recognition and adequate diagnosis is stressed. The section must accumulate the necessary material available and develop for such meetings a method of presenting the information to the field personnel in all States. We must recognize the different needs required by diagnosticians and recommend the type of training to make so they will be qualified to operate in emergencies. For example, we evaluate the different types of training available in the field of radiology and epidemiology and have our personnel attend. When facilities are available, we set up our own school to train our personnel on diagnosis of vesicular diseases and other foreign diseases.

MUCOSAL DISEASES

These are also being handled by the Vesicular Exanthema Section. Most veterinarians recognize that veterinary periodicals in recent years have had more than their share of articles devoted toward the mucosal disease complex. We were particularly concerned with these diseases as they resembled rinderpest, one of the dreaded foreign diseases; in fact, it was necessary to arrange to send recovered animals with these conditions to Canada in order to eliminate the possibility of rinderpest being one of the conditions.

We have worked closely with the research authorities, at Universities and other institutions who have been working on this problem. Slides were developed for instructional purposes. They were distributed to all of our field diagnosticians along with articles that were reproduced and distributed. Since these diseases present one of the most confusing problems in communicable diseases at this time, they require a great deal of attention. In order to keep abreast with the developments, it is necessary to read quite extensively on the vast amount of literature pertaining to the subject.

HOG CHOLERA

As many of you are aware, there has been considerable attention given to hog cholera eradication in this country during recent years. The Section has been asked to keep abreast of developments relative to this disease. For the past twelve months, we have been collecting data on the incidence and history of the disease in each State. The staff official of the Section is asked to serve on national committees for the control and eradication of hog cholera.

We have been asked to develop a program for the eradication of hog cholera. Since virulent virus is used as an immunizing agent against the disease, and is recognized as one of the ways in which the disease has been spread, the Section has been asked to keep abreast of the developments by States that have enacted laws that prohibit the use of virulent virus. The Section is expected to be fully informed on the various aspects of the disease, and all inquiries relative to it are handled by this section for the Division.

ANTHRAX

During last summer, the section acted as liaison between the Division and the State and Federal officials who were working on the anthrax outbreak in Oklahoma and Kansas. Slides and visual aids are being developed as well.

as a training program for field diagnosticians. It was recognized that there was a need for a uniform program, and this is in the process of developing along with the modification of popular pamphlets that can be distributed during outbreaks. The Section was responsible for directing diagnosticians to assist with the outbreak in Oklahoma and Kansas.

As the staff members present their activities to you, it should be clear as to how the division handles the various communicable diseases in livestock. In summary you can put vesicular exanthema and other vesicular diseases, Emergency Diseases, Mucosal Diseases, Hog Cholera, and Anthrax in the Vesicular Exanthemas Eradication Section.

ADMINISTRATIVE SECTION - ADE DIVISION

The Administrative Section is responsible for the program administrative-management aspects of the ADE Division. The section is organized into several units as follows:

- Budget and Fiscal
- Personnel
- Records and Reports
- Procurement and Property
- Visual Aids, Maps, Charts, and Educational Material
- Regulations and Amendments thereto and Memoranda of Understanding
- Mails and Files

The title of each unit is descriptive of the functions of the unit.

By direct appropriation and borrowing authority, the ADE Division is allotted approximately \$28,000,000 annually. These funds are allotted by project to the 48 States, Puerto Rico, and Hawaii, according to program requirements. The allotment covers the following categories of expense: (1) regular salaries; (2) fee testing salaries; (3) employers G.L.I. and retirement contributions; (4) travel expense; and (5) station expense. Based on budget estimates furnished by the station offices, funds are subdivided quarterly, thus establishing the Division's accounts in the R. B. O.'s. Ledger sheets are furnished monthly by the R. B. O.'s which reflect the disbursements and obligations applied against these accounts. These accounts are reconciled with bi-weekly report of expenses by project and expense items, and program reports which is forwarded by each station office. One clerk is assigned the complete fiscal operation for each R. B. O. and the WFO. Specific attention is given to quarterly apportionments in order to effect the greatest utilization of available funds. Many changes are made in the station funds during a fiscal year. Funds are increased or decreased in accordance with program requirements. For example, if for one of many reasons, the brucellosis program slows up in a certain state, funds are withdrawn and re-allotted to one or more states where the program has increased beyond the original anticipated needs. This especially is true in the case of indemnity payments where an increased percentage of infection requires additional funds for indemnity. The above, obviously, is only part of the responsibility of the Fiscal Section.

There are more than 2,000 regular employees and approximately 7,000 fee testing veterinarians in the ADE Division. The regular employees are divided into several categories, such as, veterinarians, brucellosis technicians, VE inspectors, quarantine enforcement officers, livestock inspectors, stockyards inspectors, serologists, medical biological technicians, Wage Board employees, and the clerical staff in the several

offices. The Administrative Office assists the staff in determining the number of field employees needed in the several categories, is responsible for staffing, authorizes details and transfers, issues Letters of Authorization, and is responsible for and controls the personnel requirements of the Division. After program determinations are made and decisions reached, the Personnel Division and RBO personnel offices process the personnel actions. This office is concerned with and has a part in employment, classification, training, safety, discipline, and all other phases of the personnel field.

From program reports received from the field, this office compiles program and fiscal records. The monthly reports receive wide distribution. They cover work accomplished in the field by states, by projects. The Records and Reports unit maintains a record of counties certified free of brucellosis, as well as the records showing the date counties are due for brucellosis recertification and tuberculosis remodification. Special reports of various types are requested and prepared for various offices in ARS, the Department, and others.

The procurement and property unit of the Division is responsible for reviewing and authorizing equipment and material needed by the field forces. As an example, there are approximately 850 vehicles and 42 trailer laboratories in use in the field by this Division. Many different types of equipment are used in the central brucellosis and mobile laboratories, as well as specialized equipment used on other projects. Efficient utilization of automotive equipment frequently requires reassignment from state to state, depending upon program needs. Where and when automotive replacements shall be made, predicated upon funds being available, is determined in this unit, following which the Administrative Services Division and the RBO's take the necessary action upon receipt of authorization of the Division Administrative Office. Furniture and mechanical office equipment for all our field offices is approved or disapproved in this section. Space requirements, leases, rentals, etc., are all passed upon, approved or disapproved prior to action being taken by the RBO's.

The functions and responsibilities of the visual aids unit are identified by its title. This activity is an adjunct of one of the most important functions of the Division in that the slides, graphs, maps, and materials prepared in this unit in cooperation with the information divisions of ARS and the Department are used in local and state veterinary meetings, farm bureau meetings, meetings dealing with a specific project, budget hearings, congressional committees, and show progress, accomplishments and goals of the Division's activities.

Although the Division operates under various regulations, new diseases frequently require new regulations; in other cases, amending an existing regulation is sufficient. With diseases such as vesicular exanthema, scrapie, scabies and ticks, it is necessary to impose quarantines, and as the disease diminishes, the quarantine areas are reduced, and when the disease is eradicated in a given area, the quarantine is released. Program determination

as to action to be taken is referred to this unit which prepares the necessary documents and clears them through the Office of the General Counsel prior to submission to the Administrator's Office. Memoranda of Understanding between the States and ARS covering cooperative animal disease control and eradication projects are prepared in this section. The memoranda is then cleared through the Administrative Services Division and the Office of the General Counsel after which it is forwarded to the cooperating State official for approval and signature. Upon its return, it is submitted to the Administrator's Office for signature.

The Mails and Files Unit is extremely important in that incoming mail must be delivered promptly to the program section of the Division to which it is addressed and/or the applicable unit in the Administrative Section. Outgoing mail, of course, must be handled expeditiously and files maintained so that requested files and material are available immediately. This work is of the utmost importance to the smooth and efficient operation of the Division's business.

BRUCELLOSIS CONTROL AND ERADICATION

Although the brucellosis problem now is receiving greater attention on a worldwide basis than ever before, this disease still constitutes a serious economic and public health threat. There is probably no disease of animals recognized at the present time that is more important than brucellosis from the standpoint of human health. It is because of these combined economic and public health aspects that eradication efforts are receiving strong support in this country.

Like most infectious diseases of animals, the control and eradication of brucellosis is based largely on the detection and elimination of infected animals, the prevention of exposure and the development of artificially induced resistance in otherwise susceptible livestock populations. It has been fully demonstrated that bovine brucellosis can be effectively combated along these lines with available tools and procedure.

Brucella Abortus Infection

Although the first confirmed evidence of bovine brucellosis in the United States dates back to 1910, it was not until 1934 that organized efforts were undertaken to control and eradicate this disease. Of the 3.3 million cattle tested during the first year of this program, 11.5 percent were classed as reactors. This compares with a maximum of around 5 percent animal infection for the country as a whole in the case of bovine tuberculosis.

For the past several years, brucellosis in cattle has been recognized as one of the most serious and widespread infectious diseases occurring among livestock in this country. While the disease is most prevalent in the predominantly dairy sections, it exists from coast to coast and from border to border. Even though the incidence of brucellosis in strictly range cattle is comparatively low, the infection frequently assumes serious proportions in feed lots.

Brucella Suis Infection

Brucellosis was first identified in the United States as an infection of swine in December 1914. However, there is reason to believe that *Brucella suis* was present in this country long before that date. Inasmuch as no nationwide program for the eradication of this disease has yet been put into operation, the true incidence of brucellosis in swine cannot be accurately determined. Limited records available on individual herd testing conducted in the Middle West have indicated an animal infection rate of between 3 and 5 percent for that area. While the serious nature of swine brucellosis is well recognized by farmers, veterinarians, and public health officials in those sections that are affected, it is less important to the country as a whole than bovine brucellosis. It is entirely possible, of course, that with the advancement of the eradication program in cattle, a similar project may be required eventually for swine.

Brucella Melitensis Infection

The initial identification of caprine brucellosis in the United States was made in 1911 in the state of Texas. As in the case of swine brucellosis, information on the extent of Brucella infection in goats is inadequate at the present time. As might be expected, this disease appears to be confined largely in the South-Western States where most of the goat population is found. Based upon the results of scattered testing conducted in various sections of the country, it would appear that the incidence of Brucella melitensis infection in goats does not exceed 2 percent.

Bovine Brucellosis Control and Eradication Procedures

Test and Elimination of Reactors

The nationwide campaign to eradicate brucellosis from cattle was inaugurated in the summer of 1934. In the beginning, this program was developed as a cooperative State-Federal undertaking in which eradication was based entirely upon the elimination of reactors to the blood serum agglutination test. At that time, there was considerable hope that this disease might be combated in the same manner as bovine tuberculosis, and with equal success.

Although a great deal was accomplished during the early years of the project by the test-and-slaughter method, it soon became apparent that complete eradication by this procedure alone would be very difficult to accomplish on a nationwide scale. Increasing evidence was developed to show that, because of inherent differences in the epizootiology of bovine brucellosis and tuberculosis, each would require somewhat different methods for control and eradication. Regardless of the procedures employed, it has been repeatedly demonstrated that the progress made in various areas of the country is far more closely related to the thoroughness with which procedures have been applied than with actual methods themselves.

In other words, while there is a need for employing available methods under conditions best suited to their usefulness, it is likewise important that they be applied in a thorough and aggressive manner.

Variations in the types of herds affected with brucellosis, differences in the character of the disease as it affects various herds, and the degree and length of time infection has been present are important factors to be considered in the selection and application of appropriate means of control. The complex nature of this disease cannot be ignored if maximum results from any plan are to be achieved. The value of test and slaughter has been convincingly demonstrated when used under suitable conditions. However, one of the greatest dangers connected with such a program is the matter of replacements. Herds in which heavy losses have been sustained through rigid testing programs must depend largely upon outside sources for the animals necessary to maintain commercially active enterprises. The owners of such herds are extremely vulnerable from at least two directions. First, they face the danger of introducing infection through newly purchased stock. Secondly, the introduction of known healthy animals from herds that have been free of the disease for several years provides fertile ground for perpetuating any residual infection that might remain on the premises.

The susceptibility of such animals to brucellosis is usually quite high. In spite of a great deal of confusion and many false starts, approximately 33 million cattle were tested during the first five years of the program and the percentage of reactors was reduced from 11.5 in 1935 to 2.5 in 1940. During this period much was learned about the value of limitations of the test-and-slaughter method of eradication. It soon became evident, for example, that the results obtained by the elimination of reactor animals depend largely upon the stage of infection existing in a given herd at the time eradication efforts are undertaken. In cases where the disease has been introduced recently and is accompanied by frequent abortions, there is far less chance of immediate success than is possible with herds that have passed through these violent early stages of infection. Therefore, the most favorable time to eradicate brucellosis appears to be after clinical manifestations have subsided. This, of course, is impossible in program operations and adds to the problems of combating the disease by the elimination of reacting cattle.

Vaccination

Based upon the results of extensive laboratory and field investigations Strain 19 vaccine was approved in 1914 for use in the cooperative State-Federal brucellosis eradication program. Previous experiences with test and elimination of reactors already has emphasized the need for an immunological agent and the advent of Strain 19 was generally welcomed throughout the country. In fact, during the first few years after it became available, vaccination was employed more widely and indiscriminately than was justified. This was especially true with respect to its use in the vaccination of adult animals. The persistent vaccinal reactions resulting from over-age vaccinations have been a continuing source of confusion in herds where eradication measures, based upon the removal of reactors to the blood agglutination test, have been put into operation.

As might be expected, vaccination has been extremely popular in many sections of the country and each year since it became a part of the official program there has been a marked increase in its use. For the five-year period extending from 1941 through 1945, approximately two million calves were vaccinated officially. With vaccine available through commercial channels, there was probably at least an equal number of vaccinations performed outside the cooperative program during the same period.

As the use of vaccine increased, growing evidence was provided from the field that there were definite limitations to the protection afforded by vaccination with Strain 19. The immunity established through use of this product is relative and not absolute. This fact has been overlooked too often and explains some of the disastrous results that have been associated occasionally with vaccination. There is no question, of course, about the value of Strain 19 vaccine when it is used under conditions that assure maximum benefits. The importance of limiting exposures of vaccinated animals, through the adoption of approved animal husbandry and sanitary practices, has been proved in hundreds of cases.

Brucellosis Ring Testing

As a result of earlier studies carried out in Europe on the "ABR" test, cooperative investigations of this procedure were undertaken in the fall of 1947 at the University of Minnesota. Based upon consistently favorable reports covering the experimental use of the ring test, it was included, in 1952, as part of the procedures approved for use in the official brucellosis eradication program. Since its adoption, the ring test has proved extremely valuable, especially in predominantly dairy areas of the country. Through its use, large numbers of dairy-type herds can be screened rapidly and economically for presumptive evidence of *Brucella* infection. This makes possible a concentration of eradication efforts on herds that are probably infected. Where moderate to low degrees of infection exist, counties can be ring tested at approximately 10 percent of the cost of blood testing the same areas. Both milk and cream samples can be examined by this method. Because it is not effective for diagnosing individual animal infection, suspected herds must be routinely blood tested. Insofar as its efficiency is concerned, it has been found that the ring test locates around 90 percent of the herds in which one or more *Brucella*-infected animals are in production. On the average, follow-up blood tests on ring-reacting herds are in agreement in 70 percent of the cases. Approximately 70 percent of failures to agree are due to the infected animals being out of production at the time ring tests are made. There seems to be a psychological aspect associated with milk and cream testing that encourages livestock owners to become actively interested in eradicating brucellosis from their herds. This, together with other factors relating to the usefulness of the test, has resulted in its rapidly increasing use since 1952.

Uniform Methods and Rules

Progress in the bovine brucellosis eradication efforts during the years before 1947 was handicapped by a lack of uniformity of operations in different parts of the country.

Instead of following a similar eradication pattern, the States insisted upon developing their own programs. Obviously, this lack of a uniform approach held little prospect for the eventual eradication of brucellosis. In order to correct this situation, the Bureau of Animal Industry took steps to encourage the establishment of uniform control and eradication practices. Sufficient interest was stimulated through discussions with interested groups throughout the country to result in the preparation and adoption of uniform bovine brucellosis eradication procedures at the December 1947 meeting of the United States Livestock Sanitary Association. With minor amendments added during subsequent years, this outline has continued to serve as an effective instrument in promoting the eradication project throughout the country. These recommendations are an integral part of the State-Federal memoranda of understanding relative to the cooperative brucellosis eradication project.

The design of these recommendations was predicated on the importance of providing reasonable flexibility for handling the brucellosis problem under varying herd conditions. Essentially they consist of four separate plans which may be reviewed briefly as follows:

Plan A-- Test and slaughter, with or without calf vaccination

This plan has eradication as its immediate goal and is the method of choice where the incidence of infection is low and herds are self-contained. It has been highly successful in herds of this type when related recommendations have been closely followed. About seven out of ten infected herds can be freed of brucellosis by two tests. Three herds in ten require three or more tests to accomplish the same results. Difficulties with this procedure are most frequently encountered in highly susceptible herds where virulent infection is spreading rapidly.

Plan B-- Test, calf vaccination, temporary retention of reactors

As the title indicates, this plan is designed to enable the owners of heavily infected herds to work out a difficult brucellosis situation in a gradual manner, thereby avoiding serious economic shock. It permits reactors to be held in quarantined herds for periods not to exceed three years. Under normal conditions, this provides time to raise enough resistant heifers on the premises to allow replacement of the adult infected animals. Plan B has been widely used throughout the country and for the most part has worked effectively as a stepping stone towards Plan A and eventual eradication.

Plan C--Calf vaccination without test of any part of the herd

This procedure was developed primarily to encourage the range cattle industry to recognize the brucellosis problem and to participate more actively in the program. It has been difficult to interest the range people in brucellosis eradication and Plan C was adopted as a means of bringing them into the program with the hope that they would eventually move towards more effective operations. Plan C is confined to herds where the movement of animals is allowed only through special permits issued by State livestock sanitary officials.

Plan D--Adult vaccination

Plan D was included in the procedures to counteract unofficial vaccination of adult cattle. Under present conditions, there is every reason to discourage this practice and fortunately it has declined steadily during the past few years. In the presence of so-called "infection storms", a condition usually existing in herds where vaccination is requested, most of the susceptible animals already are exposed before any value can be realized from the use of vaccine. Consequently, any benefits that may seem to be provided by adult vaccination are more imagined than real. Plan D required the testing of entire herds, with vaccination of adults confined to non-reactor cattle that have been tested within the previous ten days. This plan is available for use only in emergencies where there is evidence of rapidly spreading infection and then only with written approval of the cooperating State-Federal agencies. With increasingly rapid progress being made throughout the country in developing modified-certified areas, consideration is being given to deleting Plan D from the Uniform Methods and Rules.

Brucellosis Eradication Procedures for Swine and Goats

At the present time no nationwide programs have been developed for the eradication of brucellosis from swine and goats. However, we may be approaching the point where such projects are essential. This is especially true with regard to swine brucellosis, which constitutes a recognized threat both economically and from the standpoint of public health.

Sufficient data have been assembled on brucellosis in swine during the past few years to permit the development of suggested methods for the control and eradication of this disease. The results of field trials, based upon testing and segregation of weanling pigs, have been encouraging and suggest the possibility that practical methods for economically eliminating *Brucella suis* infection from swine are now available. Although the blood-serum agglutination test does not possess the same accuracy in swine as in cattle, it has proved effective for diagnosing herd infections.

As already pointed out, *Brucella melitensis* infection in goats does not occur extensively in the United States and consequently, no concerted effort has been made to eradicate the disease. However, from the results obtained by the removal of reactors to the blood-serum agglutination test in individual herds throughout the country, it seems reasonable to believe that this procedure can be effectively employed as an eradication tool. It has been found that goats reacting in titres as low as 1:25 must be considered if test and elimination of reactors is to be successful in known-infected herds.

Bovine Brucellosis Eradication Progress

During the first 15 years of the cooperative eradication program, progress was erratic, even though the overall picture continued to show general improvement. For many years the project was hindered by lack of unified effort. However, great improvement was noted following the adoption of uniform control and eradication practices. Further difficulties arose during World War II as the result of acute shortage of trained veterinary personnel available for field operations. From July 1934, to March 31, 1958, a total of over 15 million herds representing approximately 187 million cattle, were tested for brucellosis. Over the same period, the indicated animal infection dropped from 11.5 percent to 1.5 percent. As mentioned before, the eradication picture has changed rather markedly at various times, concurrently with alterations in the level of field activities. During the first seven years of the program, when yearly testing volumes remained high, there was a decline each year in the percentage of reactors disclosed. With personnel problems developing in 1942, testing began to drop off and the percentage of reactors started to rise, reaching a secondary peak of 5 percent in 1947. From this point on, there has been a consistent reduction in animal infection rates.

Over the past few years, greatly increased interest in brucellosis eradication has been displayed by various groups, including the livestock industry, the veterinary profession, livestock sanitary officials, and the general public.

This interest has been reflected in the volume of official work performed. For the 9-month period ending March 31, 1955 more than 12 million cattle were tested for brucellosis. This compares favorably with the number tested during the same period in fiscal year 1956. For the 17-year period (1941-57) a total of 36 million calves were officially vaccinated with Strain 19. Since its approval in 1941, the use of Strain 19 has increased each year, reaching an all-time high of 5.5 million calves vaccinated in 1957.

While it is impossible to accurately assess the value derived from vaccination over the past several years, there is reason to believe it has played an important role in the eradication project. As programs based upon test and elimination of reactors move into areas where widespread vaccination has been conducted, the incidence of infection disclosed has been surprisingly low in many instances. Moreover, it has been encouraging to note a gradually changing attitude on the part of livestock owners with respect to the role calf vaccination should play in the eradication plan. Rather than accepting this procedure as a means of control alone, there is increasing interest in utilizing vaccination as a move toward eventual eradication. In many sections of the country where vaccine has been extensively used, we are seeing a significant up-swing in the volume of blood testing. There is no question about the advantages of vaccination when it is employed as an adjunct to test and elimination of reactors. So long as any infection exists in the country there will be a continuing need for vaccination.

So far, 11 States and Puerto Rico have qualified as Modified-Certified Brucellosis-free Areas. This designation certifies that the herd and animal infection disclosed in these states by testing does not exceed 5 and 1 percent respectively. A number of other states is rapidly approaching this same status and should be eligible for certification within the near future.

Owing to extensive movements of livestock, the maintenance of certified areas has constituted a rather serious problem. Previous experience with recertification at three-year intervals has shown that a significant increase of infection may be found in many such areas over this period of time. With the advent of the milk and cream ring test, this difficulty has been largely overcome in dairy sections of the country. By conducting semi-annual ring tests at milk and cream collection stations, it is possible to detect most centers of infection early enough to limit spread of the disease. From the standpoint of its economy of operation and its ability to detect brucellosis on a herd-infection basis, the ring test has fulfilled most earlier expectations. This test offers a means of employing qualified lay technicians for the collecting of milk and cream samples, thereby permitting the concentration of veterinary services on herds presumed to be infected. Since it became a part of the official program in 1952, approximately 7 million herd tests have been made representing an estimated 119 million cattle.

Brucellosis Test Data on Swine and Goats

The increasing recognition that must be given to interspecies transmission of *Brucella* types has made it essential that consideration be given to all susceptible livestock groups. With this in mind, we have been tabulating results obtained from tests made on swine and goats in the various States. To date, these records have been collected over a period of more than five years and represent a total of 486,989 swine and 315,447 goats tested for brucellosis. Of the swine tested, 5.9 percent were classed either as reactors or suspects. In the case of goats, 1.8 percent were similarly identified. All States have been surveyed with respect to the swine brucellosis problem. In brief, the following information was obtained:

1. Twenty States now have provisions for certifying swine herds as brucellosis free. In several additional States increasing interest is evident in establishing a swine brucellosis program.
2. As of December 1957, there were 416 qualified brucellosis free swine herds in 17 States.

With no organized program available for the eradication of brucellosis from these species, the number of tests being conducted at owners' requests continues to be surprisingly high. And the results of this study reflects growing concern about the brucellosis situation on the part of many swine and goat raisers.

Expansion of the Bovine Brucellosis Eradication Program

The Congress of the United States has made available additional funds for use in accelerating the brucellosis eradication project during fiscal years 1955-1958. This action could not have been taken at a more appropriate time as current interest in eradicating the disease was never greater. As might be expected, immediate expansion of these operations has been greatest in the States where local programs were best organized. However, it has been possible to accelerate the program in most sections of the country far more rapidly than expected. The fact that the expanded program called for the restoration of former maximum indemnity payments of \$25 for grade animals and \$50 for pure-breds to owners of cattle destroyed because of brucellosis has been an important factor in this regard. Furthermore, under present operating procedures, States with cooperative agreements are no longer required to match Federal indemnity payments. Fortunately for the expanded program, two years of research was completed in time to throw new light on the interpretation of reactions in officially calf-vaccinated animals. These studies, conducted in field-vaccinated herds in different parts of the country, were designed to correlate blood-serum agglutination titres in official vaccines and non-vaccinates with results of bacteriological examinations.

Briefly, these investigations showed that, in the case of calf-vaccinated cattle, the diagnostic level used for interpreting blood-serum agglutination reactions could be safely raised one full dilution over that employed for routine diagnosis of brucellosis in unvaccinated animals.

Thus, with the alternate interpretation, officially calf-vaccinated animals are not considered infected unless they react to the agglutination test in titres of 1:200 or higher. This compares with reactions in the 1:100 or higher dilutions that are still considered diagnostically positively for non-vaccinates. The new interpretation for vaccines has been accepted and incorporated into the official recommendations for bovine brucellosis eradication procedures.

At the inception of the expanded program, it was realized that the personnel requirements for the various states would have to be met through the employment of practicing veterinarians. This being the case, a system was developed to pay cooperating veterinarians on a per-head-per-herd-and-per-head basis, on schedules approved by the Agricultural Research Service and the individual states. Participation of the veterinary profession in the new program has been reasonably good. Approximately 7,000 are now signed up for service and many are actively engaged in various aspects of the program.

Discussion

1. The momentum generated in program operations during the past two years is a valuable asset that can be used to advantage. Experience has shown that ground may be rapidly lost when pressures are relaxed. On the other hand, an expanding program tends to attract even wider participation.
2. There are five important factors with which the success or failure of the brucellosis eradication campaign is intimately related. These are (a) attitude of the livestock industry, (b) available funds, (c) manpower, (d) necessity for complete area work, and (e) danger of complacency in certified areas.
 - a. There are still sections of the country where more effort needs to be made along information lines. Whenever the industry is fully informed about the program, its support is always forth-coming.
 - b. The increased financial assistance being given the brucellosis project by the States can be accepted as a sign of the times. There appears to be a growing realization that the more support everyone provides, the sooner brucellosis and its associated losses will be eliminated. This trend needs to be encouraged in every way possible.
 - c. Although the participation of nearly 7,000 practicing veterinarians has contributed materially to the eradication effort, there are still areas in which service requirements of the program are not being met. This is especially true in those sections of the country where few, if any veterinarians are located. It also occurs to a lesser extent in certain other areas as a result of practitioners being slow to carry out their assigned responsibilities.
 - d. We have reached the time when all brucellosis eradication work should be conducted on a complete area basis. Without the protection afforded by this type of operation, progress is delayed and difficult to maintain. Every encouragement possible needs to be given complete area work.

e. Complacency in certified areas is to be avoided at all costs. There is danger that efforts will be relaxed in qualified counties and States to the extent that infection rates are allowed to increase. The ultimate goal of complete eradication must be emphasized continuously.

3. The accelerated brucellosis eradication program has demonstrated conclusively the effectiveness of available tools and procedures when aggressively and properly applied. There is no question about our ability to achieve nationwide certification within the near future and eventual complete eradication of this disease if we so desire.

INTERSTATE REGULATIONS ENFORCEMENT SECTION

The Interstate Regulations Enforcement Section of the ADE Division is concerned with violations of two different types of laws. One group is composed of the Animal Quarantine Laws of 1884, 1903, and 1905 (A. Q. Laws). The other law is the so-called 28-Hour Law (Humane Act), enacted June 29, 1906, the purpose of which is to prevent the overconfinement of animals in interstate commerce in cars, boats, or vessels beyond the statutory period without being unloaded in a humane manner into properly equipped pens for feed, water, and rest.

A violation of the Animal Quarantine Laws is a criminal offense while a violation of the 28-Hour Law is a civil offense. In the first instance, it is necessary for the Government to prove beyond a reasonable doubt that the crime was committed by the defendant. In the second instance, it is necessary for the Government to prove by a preponderance of evidence that the violation was committed by the carrier. In most cases the railroad records constitute this evidence.

Prior to the establishment of the Bureau of Animal Industry in 1884 the problem of eradicating infectious livestock diseases was one for the State or States involved to cope with individually. As those of you know who have read the history of the era, it was an almost insurmountable task for a State that apparently had eradicated an infectious disease to keep from becoming reinfected by animals from neighboring States. In addition, there was always the question as to whether a specific infectious disease actually existed in a given State because livestock officials were hesitant to acknowledge the existence of an infectious disease for fear of an embargo or other reprisal. Also, some States were not in a position, from a financial standpoint, to stand the expense of eradicating an infectious disease that had become widespread. It was largely these circumstances, as well as embargoes against American livestock by foreign countries, that brought about the establishment of the Bureau of Animal Industry by the Act of May 29, 1884.

Among other things, this Act provided for the Commissioner of Agriculture:

- 1 - To make regulations necessary for the suppression and extirpation of contagious, infectious, and communicable diseases of livestock.
- 2 - To expend Federal funds for investigation, disinfection, and quarantine measures in cooperation with States in the extirpation of infectious diseases. This was later extended to include expenditures of Federal funds for eradication and payment of indemnities when a cooperative agreement was entered into between the Department of Agriculture and a properly constituted State authority.
- 3 - To make investigations as to the existence of such livestock diseases.

4 - To notify in writing transportation companies and publish in newspapers notice of the existence of contagious, infectious, or communicable diseases.

The Act prohibits the interstate movement of animals known to be affected with a contagious, infectious, or communicable disease, when it states "that no railroad company ... shall receive for transportation or transport.. nor shall any person... deliver for such transportation... nor shall any person drive on foot or transport in private conveyance any livestock, knowing them to be affected with any contagious, infectious, or communicable disease ..." The Office of the General Counsel (Department of Agriculture) has made it clear to us that for a "knowing" violation it is not necessary to show that the shipper and/or carrier had knowledge of the law or regulations involved, but only that he knew or should have known that the animal in the shipment was affected with an infectious disease and that it was transported interstate. Neither is it necessary to prove that the violation was willfully committed.

This Act also direct the United States Attorneys to prosecute all violations which are brought to their attention. (A violation of the 1884 Act is a misdemeanor punishable by a fine of not less than \$100 nor more than \$5000, or by imprisonment for not more than one year, or by both such fine and imprisonment.)

The Act of 1903 was necessary because the Department was faced with an emergency. Supreme Court decisions pointed out the fact the Secretary was exercising authority he actually did not have. The Act of 1884 directed the Commissioner of Agriculture to make special investigations as to the existence of infectious diseases, along the dividing lines between the United States and foreign countries, and along the lines of transportation in the United States and report his findings to the Secretary of the Treasury, who was directed to establish such regulations concerning the exportation and transportation of livestock as the results of such investigations might require. The Act of 1903 corrected this by giving this authority to the Secretary of Agriculture and specifically provided for Federal inspectors to inspect livestock and issue certificates for their interstate movement. Also, it gave the Secretary of Agriculture authority to make regulations ... to prevent the introduction or dissemination of any contagious, infectious, or communicable disease of animals from a foreign country into the United States or from one State ... to another, and to seize, quarantine, and dispose of any hay, straw, forage, or similar material, or any meats, hides, or any other animal product coming from an infected foreign country to the United States. (Violation of the 1903 Act is a misdemeanor punishable by a fine of not less than \$100 nor more than \$1000, or by imprisonment not more than one year, or by both such fine and imprisonment.)

The Act of 1905 empowered the Secretary of Agriculture to establish and maintain quarantine districts and to promulgate regulations permitting and regulating movement of cattle and other livestock interstate therefrom. The establishment of a Federal quarantine to prevent the spread of a communicable livestock disease from one State to another is a drastic measure that is usually invoked only as a last resort.

The procedure generally followed when a serious livestock disease is diagnosed is for the State involved to immediately establish a quarantine, thereby stopping the movement of diseased and exposed animals within the State, and then proceed to eradicate the disease. If, however, it has become widespread, or there is an undue delay in disposing of the affected animals, then a Federal quarantine is resorted to in order to prevent the interstate movement of any animals from the quarantine area. If the disease continues to spread it may become necessary to extend the Federal quarantine to the whole State. In this connection the Secretary of Agriculture has authority to cooperate with the State concerned in drastic eradication measures, including the purchase of diseased or exposed animals and contaminated materials. (Violation of the 1905 Act is a misdemeanor punishable by a fine of not less than \$100 nor more than \$1000, or by imprisonment for not more than one year, or by both such fine and imprisonment.)

Because of the prohibition against the interstate movement of diseased livestock in the basic Act of 1884, it was necessary in 1920 to ask Congress to pass a special law permitting the interstate movement of cattle reacting to the tuberculin test. (At that time the large number of reactors made it difficult to dispose of them within the State where found. In addition, the salvage price was being continually lowered.) Under this new authority the Secretary of Agriculture prescribed rules and regulations for the interstate movement of reactors, which require that they be tagged, branded, and accompanied by a certificate, and shipped to public stockyards or slaughtering establishment operating under Federal inspection.

On February 2, 1928, Congress amended the basic Acts by directing that wherever the term livestock is used it shall be followed by the words "and/or live poultry." This brought live poultry under the same laws as livestock.

In 1951 it was necessary to ask Congress for authority to permit the interstate movement of animals which have reacted to a test for paratuberculosis or brucellosis. This was granted and the Department issued regulations governing these types of reactors similar to the regulations governing the interstate movement of cattle reacting to the tuberculin test.

As the brucellosis eradication program progressed and States and Counties became certified, the need for a general brucellosis regulation was apparent. After much discussion and consideration of many comments and suggestions a brucellosis regulation became effective January 1, 1957. Under this regulation there is the prohibition against the interstate movement of cattle with certain exceptions:

- 1 - The only change in the handling of reactors is that they may now be moved interstate to specifically approved stockyards and specifically approved slaughtering establishments. Previously such reactors could go only to establishments operating under Federal meat inspection or public stockyards where Federal inspection is maintained.

- 2 - One of the exceptions to the brucellosis regulation is that steers, spayed heifers, and calves under eight months of age may be moved interstate without restriction under this regulation.
- 3 - Cattle may be moved for immediate slaughter to public stockyards, specifically approved stockyards, Federally inspected slaughtering establishments, or specifically approved slaughtering establishments, provided they are accompanied by a waybill or owner or shipper's statement, as outlined in the regulation.
- 4 - Cattle may be moved to public stockyards or specifically approved stockyards for sale if accompanied by a waybill or a statement of owner or shipper, as outlined in the regulation; provided, however, that movement of such cattle to another destination must comply with the provisions of this part, the same as if the cattle had been originally consigned direct from point of origin to such destination.
- 5 - Cattle other than those mentioned may be moved into areas not certified as modified brucellosis free or into modified certified brucellosis free areas, provided they are accompanied by a certificate issued by a Federal or State inspector, or an accredited veterinarian, as outlined in the regulations.

This is a brief summary of the brucellosis regulation. The Animal Quarantine Laws of 1884, 1903, and 1905 are found in the back of B.A.I. Order 309, and are the basis for our present Federal interstate regulations.

The intrastate movement of livestock is, of course, controlled by State laws and regulations. Practically all States have health requirements governing the admission of animals from other States as well as the movement of livestock within the State. (Circular I - U. S. Livestock Sanitary Association.)

For some years suggestions have been offered by different interested organizations and individuals, proposing some degree of uniformity of requirements for the admission of livestock into the several States. While such a plan placed in operation would avoid the confusion now prevailing when consignors undertake to move livestock interstate, regional differences seem to provide some justification for the variety of requirements among the individual States. As for an example, an importing State would have cause to set up more stringent regulations than an exporting one.

Since 1940 the Council of State Governments has made efforts to coordinate the regulations of the several States with a view to uniformity. The Committee on Laws and Regulations of the United States Livestock Sanitary Association in its Proceedings of 1944 presented the basis for more uniform requirements governing the interstate movement of livestock and also included a suggested, or model, form. At this meeting arguments were offered by representatives of breed associations, State sanitary officials and livestock associations, each of which tended to support uniformity of regulations.

Two States followed without material alteration the code proposed by the Livestock Sanitary Association, evidently regarding the restrictions imposed on livestock offered for entry as adequate. Other States have set up requirements similar or with modifications. A few States have imposed even more regid requirements than those outlined in the model code.

Traffic and movement tend to increase the probability of disease transmission. This situation, together with the importance of the livestock industry to our economic welfare, led to recognition of the fact that adequate regulatory measures must be employed to limit or control the spread of disease. Experience has shown that both Federal and State authority are needed for adequate control, whether the proposed movement of livestock be intended for interstate, intrastate, or foreign shipment.

States alone have been unable to control livestock diseases in some cases. On the other hand, the Federal power is incomplete within the State. As the State's authority is absolute in the event of intrastate movement, it also follows that the Federal authority applies when interstate movements are made.

In spite of the contagious nature of the various diseases of animals and of the volume and traffic of the industry, it is recognized that the several State regulatory agencies, in cooperation with the Federal, have served to make the United States outstanding in the field of animal disease control and eradication.

As has been previously pointed out, one purpose of the Animal Quarantine Laws and the regulations implementing these statutes is to prevent the interstate movement of diseased animals. The enforcement of these regulations has an important bearing on the welfare of the livestock industry throughout the country for their interests would be seriously impaired if the work was not energetically prosecuted. It is not implied that the State requiring health or test certificates as a condition of entry is free of such disease, but that the authorities intend to prevent the accumulation of more infected animals within the State. Such restrictive measures are to be regarded as well founded precautions. Protective measures have been designed to prevent the entry of diseased or exposed livestock, and not for the purpose of setting up economic barriers.

All reports of violations of the Federal regulations in the interstate movement of diseased animals are fully investigated. The lack of prompt and vigorous action could very well lead to the disregard of all Federal Animal Quarantine Laws and seriously undermine the whole disease eradication program in the United States. State livestock sanitary officials consistently urge that Federal prosecution be instituted to protect the industry from unscrupulous dealers who traffic in diseased animals.

Our usual procedure is to have field employees who investigate the alleged violations forward their reports, through the inspector in charge, to the Washington office, where the evidence is reviewed and recommendation for prosecution is made when the facts appear to warrent such action. If there are some extenuating circumstances, or sufficient evidence cannot be furnished, then such cases are filed without further action.

Where additional information is needed, investigators are instructed in detail as to the type of affidavit and other pertinent information required. Most of these violations involve the interstate movement of animals affected with a communicable disease, such as hog cholera, vesicular exantheema, sheep and cattle scabies; illegal interstate movements from a quarantined area; interstate movement of reactor animals which have not been tagged, branded, and accompanied by a proper certificate; and failure to disinfect vehicles which have contained diseased animals. If after being reviewed in the ADE Division, it is determined there is substantial evidence of a violation, then it is forwarded to the Office of the General Counsel for consideration. If that office concurs in our decision, the appropriate documents are prepared and the case is forwarded to the Department of Justice where it is again reviewed before being sent to the United States Attorney to institute prosecution proceedings. In some instances the General Counsel, Department of Justice, or the United States Attorney may request additional information or ask for clarification on some point before taking further action. When we are finally notified that the case is considered satisfactory and forwarded for prosecution, we advise our inspector in charge to render all possible assistance to the U. S. Attorney.

28-HOUR LAW ENFORCEMENT

The first 28-Hour Law was enacted on March 3, 1873, and a somewhat stronger law, still in force, was enacted June 29, 1906. This law requires that animals in interstate commerce by rail or water be unloaded at stated intervals for feed, water, and rest.

A problem arose with the use of railways for transporting livestock to market when crude equipment and methods of handling stock in transit resulted in inhumane practices in losses through shrinkage, injury, etc. This condition evoked many protests and resulted in the enactment of the first 28-Hour Law on March 3, 1873. However, the Department had neither means nor authority to enforce its provisions until the Bureau of Animal Industry was established 11 years later. The present law was enacted June 29, 1906. It provides that livestock in interstate transportation by rail or water shall be unloaded in a humane manner at stated intervals into properly equipped pens for rest, water, and feeding, or under certain conditions they may be fed and watered in the car.

The purpose of the 28-Hour Law is to prevent the over-confinement of animals shipped in interstate commerce by common carrier. Waybills and records maintained by carriers and others are daily examined and apparent violations reported at stations where Federal livestock inspectors are stationed. Inspections are also made from time to time at approximately 900 feed, water, and rest stations in 48 States to ascertain if the facilities and equipment are maintained for the safe and humane handling of the species of animals for which they were designed to accommodate. When unsatisfactory conditions are found at these stations they are promptly brought to the attention of the responsible railroad by the Animal Disease Eradication Division inspector in charge for corrective action. In addition, the railroad records are checked and all cases of over-confinement beyond the statutory limit are reported to the Office of the General Counsel for prosecution.

Due to the lack of authority to promulgate regulations it is necessary to base our recommendations for prosecution of violations of the 28-Hour Law on court decisions. Through the years practically every phase of the 28-Hour Law has been contested by carriers and court decisions rendered. These decisions have been annotated in book form and are used by the Washington Office as a guide for evaluating apparent violations. It appears from the language of the law that it is not applicable to trucks.

The lack of authority to make regulations to enforce the 28-Hour Law also made it necessary for the Department to determine the amount of feed that should be given to livestock and the amount of time to be allowed when animals are fed, watered, and rested in cars without unloading. While the law requires that animals be unloaded into properly equipped pens for rest, water, and feeding for a period of at least five consecutive hours, there is also a proviso that they need not be unloaded if they can and do have proper feed, water, and space, and opportunity to rest in the car.

Following conferences with carriers, owners, and shippers of livestock, operators of slaughtering establishments, and others, the Secretary of Agriculture issued what is known as a Statement of Policy governing the feeding, watering, and resting of livestock in transit, and this sets forth the minimum requirements which would be accepted by this Department as complying with the Act.

The Department is without authority to extend the statutory period of confinement; however, several courts of appeal have held in effect, that where a terminal or switching road moves livestock with diligence and dispatch from its interchange with a trunk line carrier to a place where the animals can be unloaded (reasonably nearby), it does not violate the 28-Hour Law even though the statutory period has been exceeded before the shipment is received, or expires while the cars are in its hands.

In order to avoid the necessity for determining in every case whether the livestock has been moved with diligence and dispatch, the Department has entered into agreements with switching roads at a number of the larger terminals setting forth the time considered reasonable for the movement between the point of interchange and the point where the animals were to be unloaded. These allowances have been made only on the request of the terminal or switching road concerned, and not at the solicitation of a trunk line carrier or for its benefit.

While the 28-Hour Law was enacted primarily for humane reasons, to reduce to a minimum the cruelty incident to the transportation of livestock, it also protects the interests of owners of animals and of the public, by safeguarding the health and condition of the animals and by preventing their serious injury while in transit. To have his stock reach the market in as nearly the same condition as when it leaves the farm or the ranch is the objective of every stockman and shipper. This can be accomplished only by giving the animals while in the course of transportation as nearly as possible the cars, attention, feed, water, and rest to which they have been accustomed. If animals are confined in cars for an excessive period without feed, water, or rest, or if unloaded within the statutory time for the stipulated 5-hour period but into a pen too small for them to rest or even move about, or too muddy to lie down, or if the proper kind and amount of feed and water are not supplied, or if in the unloading or reloading process the animals are handled in an inhumane manner, the objective desired by the shippers and contemplated by the statute is not attained. The livestock as the result of such treatment arrive at destination in a feverish condition and the quality of the meat may be affected if the animals are slaughtered while in that state.

How well the 28-Hour Law is being enforced may be judged from the fact that whereas formerly it was not uncommon for carriers to confine animals in cars for periods of 50 to 60 hours or even more, now the carriers, as a whole, are endeavoring to unload them within the statutory period and to give them proper care and treatment when unloaded.

POULTRY DISEASES

There are over 60 recognized diseases of poultry with which we must be prepared to deal. The most fatal of all poultry diseases is European fowl plague. This disease gained entry into the United States, and was recognized in the New York-New Jersey area in 1924-25 and again in 1929. Both outbreaks were eradicated by emergency State-Federal cooperative programs.

Back in the 1930's and before that time, fried chicken was a delicacy which was occasionally enjoyed in the spring as the chicks reached "frying-size." Baked chicken for Sunday dinner was an occasion to look forward to in those days.

The war years and the shortage of red meats were stimulating factors to the broiler industry which had started in some of the south-eastern States during the late 30's. Geneticists developed rapid growing strains of meat-type chickens, and various growth stimulants were showing evidence of success. During the years when red meats were in short supply, our population became accustomed to eating broiler chickens. After the war red meats became more plentiful, but their prices skyrocketed, and our populace continued to consume broilers to the extent that the industry continued to expand.

In 1934 there were 34 million broiler chickens produced while in 1955 (the latest available complete figures) there were one billion, 78 million produced. This represents over 500 percent increase in production during the 21-year period.

The turkey industry has increased at a tremendous rate during the same period. Their production has increased nearly 300 percent.

Last year there were nearly 60 billion chicken eggs produced in the United States. About 2 billion were used for hatching purposes and the balance for table use. The annual income from the poultry industry is estimated at 6 billion dollars, and represents approximately 18 percent of the total income from all agriculture.

Along with its rapid expansion, the poultry industry has suffered some growing pains. In recent years the industry has become highly competitive which is a direct result of narrow profit margins. This problem has been overcome to some extent by mass production methods. Large flocks are the rule rather than the exception.

The large investments in chicks, housing, and other essential equipment, as well as the land for the operations, are a major problem. In addition the feed bills on large flocks are a major item of expense. These costs have resulted in what is called "integrated operations" or more commonly "integration."

Integrated operations are of various types depending upon the degree. One common type is where the feed dealer furnishes the grower with chicks and feed. This is routinely done under written contract whereby the costs are deducted from the sales and the profits divided between the contractor and the contractee at an agreed upon ratio.

A true integrated operation is one in which an individual or a corporation owns and operates the breeder flock, feed business, hatchery, broiler plant, slaughtering establishment, and in some cases, even the retail outlets where the final product is sold. There are a number of these operations but the average integrated operation is generally a combination of these factors.

Where individuals or corporations are financing extensive growing operations, they do everything possible to insure their investment. This usually includes disease prevention and control in all flocks. The parent organization may employ a veterinarian for the disease phases, but the disease control phase is generally handled by a so-called "service-man." These servicemen are supervisors and have the final decision as to what disease prevention and control measures are taken. They are prone to assume their capabilities as being far beyond that of the average veterinarian whereas my experience with them has been that they are just plain good salesmen. Few of them have any formal education which would qualify them in the disease field.

The latest loss estimates indicate that the industry suffers an annual 15 percent loss of adult birds. There are no figures on the losses of broilers. The best available information indicates that broiler losses vary from 5-10 percent during the normal growing period.

It is estimated that our present poultry industry must increase its production 25 percent by 1965 if we are to feed our growing human population. Part of the necessary increase could easily come through disease prevention, control, and eradication.

Traditionally the veterinary profession has avoided furnishing the same type of professional service to the poultry industry that it has furnished to the large animal industry. This is not entirely the fault of the profession, but I am sure they must assume much of the responsibility. The exception to this has been the veterinary pathologist. All major poultry producing States have poultry diagnostic laboratories which are staffed by qualified personnel. Many of the State educational institutions are carrying on poultry disease research.

The poultry industry has grown rapidly and is traditionally independent from all other types of animal production. So far they have assumed the attitude that they can handle their own problems without outside help. Up to this point we have to assume they are correct since only five State Livestock Sanitary Officials have had direct control over poultry diseases until just recently.

The history of disease eradication has been that no disease of animals or poultry has ever been eradicated on an individual herd or flock basis.

With this in mind, it is only reasonable to assume that poultry diseases will not be the exception. Therefore we must presume that poultry disease control and eradication programs must be developed and eventually carried out on an area basis. Animal Disease Eradication Division has the responsibility for developing and administering area poultry diseases prevention, control and eradication programs.

The ADE Division recognized the need for national coordination of poultry disease control and eradication programs and the Poultry Diseases Section was activated in July of 1956. Many problems in this field exist and the answers to some of them are quite elusive.

This Section has established contact with the poultry industry, research workers, other interested governmental agencies, and the various responsible State officials. In many States the responsibility for poultry diseases is not or has not been vested in the State livestock sanitary official. Instead the authority frequently rests with the head of the Poultry Department of the State agricultural college or some other person entirely unrelated to the usual disease control channels. This has made the work of this Section a difficult one and will remain a problem for some time to come.

The Division did not have veterinary personnel with experience or training in poultry disease work. This problem is being overcome by the poultry disease diagnostic training courses being conducted at Iowa State College. To date 49 veterinarians from 36 States, Puerto Rico, and Mexico have received the training. Thirty-six of the diagnosticians are ADE, 10 are State-employed, and three are AMS (Poultry Inspection) supervisors.

Supplement 2 to ADE Division Memorandum No. 501.4 entitled, "Investigation of Suspected Emergency Poultry Disease Outbreaks," has been developed and distributed to the field. In addition a poultry diagnostician's kit of equipment has been developed and will soon be distributed, one to each ADE diagnostician.

Part 82, Title 9, CFR entitled, "Psittacosis or Ornithosis in Poultry," has been developed and is presently in effect. This regulation prohibits the interstate movement of diseased or exposed birds.

Mandatory Federal poultry inspection becomes effective on January 1, 1959. Once this law becomes effective, we anticipate general concern of the industry in disease control and eradication due primarily to the reduction in revenue, directly and indirectly, from high condemnation rates in slaughtering establishments now operating without inspection. When the producer starts realizing the amount of his losses due to disease, he is likely to demand action by State and Federal Regulatory officials.

Until such time as the industry demands action, this Section is gathering information on the latest research developments and the incidence of the diseases in the field. Through our present organization, we are in a position to deal with any foreign-type poultry disease which may gain entry into the United States.

LABORATORY SERVICES OF THE ADE AND AIQ DIVISIONS

In 1884 the former Bureau of Animal Industry consisted of a staff of four persons, namely, Dr. D. E. Salmon, Chief; Dr. Theobald Smith, a young scientist in his twenties who was preparing to do battle with Tick Fever; Mr. Kilborne, Bachelor of Agriculture; and Alexander, an ex-slave, who "sat about solemnly, and when urged, got up to wash the dirty bottles or chaperon the guinea pigs." From this beginning the BAI grew into an organization with a broad field of responsibility in research, diagnosis, and eradication of diseases occurring in all types of domestic animals. From the very beginning when Theobald Smith set out to hunt microbes in a little room in the attic of a government building, the importance and need of laboratory services to augment disease control and eradication activities has been recognized. You, who are engaged in disease control and eradication activities in the field are most cognizant of all of the importance of laboratory services to your everyday activities. Correct diagnosis and the supplemental information provided by the laboratory study of disease conditions are the most important factors in formulating successful programs for effective disease control.

As a result of reorganization in the Agricultural Research Service, research activities relating to animal diseases are now administered under the Animal Disease and Parasite Research Division. Diagnostic and various other laboratory activities of the Animal Disease Eradication and the Animal Inspection and Quarantine Divisions previously performed for the most part by the Pathological Division of the former BAI, are now the responsibility of Laboratory Services, ADE Division.

In order to acquaint you with the laboratory programs that are in progress, and those that will be available in the future, I would like to review with you today our present and projected organization. The word "projected" is used since we are looking ahead to considerable expansion of diagnostic and related laboratory services in the regulatory field with the completion of the new U.S.D.A. Animal Disease Laboratory at Ames, Iowa. The ADE-AIQ laboratories will occupy approximately 20 percent of this structure when it is completed about 1960. Laboratory Services has the responsibility for planning, equipping, and organizing the regulatory laboratories in the new building. This work has been in progress for the past two years under the supervision of Dr. Glenn B. Van Ness. It is expected that the contract for construction of the building will be let in the very near future, and construction is expected to start late this summer. We shall take a quick review of plans for the new building a little later.

All laboratory services have the basic requirement of adequate facilities. As most of you know, in June 1955, a group of competent scientists from outside the Department were asked to inspect our animal disease laboratories located at Washington; Beltsville, Maryland; Auburn, Alabama; and Denver, Colorado, to determine the possible hazards to human health involved in working in these facilities. The committee reported that laboratories in use were not adequate to safeguard workers and other persons in the buildings from exposure to disease or the experimental work from cross-contamination. Because of this report it was decided to discontinue all laboratory work in the research and regulatory fields at Washington, Auburn, and Denver. This has resulted in the curtailment of some work, and the need for establishing suitable laboratory facilities elsewhere, and entering into cooperative

programs with the States for conducting essential services that cannot await completion of the new laboratory. Various State Laboratories have been most cooperative in lending their assistance as needed during this interim period. Our field personnel too have adjusted to the situation very well, and have realized that our shortage of laboratory space and service is an interim situation.

The laboratory service requirements of the Animal Disease Eradication Division and the Animal Inspection and Quarantine Division for operational purposes may be grouped under three headings: (1) Biologics Development and Serology; (2) Diagnosis (Pathology, Microbiology, and Chemistry), and (3) Animal Biologics Control.

Biologics Development and Serology is presently concerned for the most part with the production of Brucella antigens used in the State-Federal programs for the eradication of brucellosis. Last year 876,060 cc. of Brucella plate antigen, 218,700 cc. of tube antigen, and 130, 890 cc. of milk ring test antigen were produced by this unit at Beltsville under the direction of Dr. E. L. Love. In this field also, Laboratory Services has the responsibility of supervising and consulting with the State - ADE Brucella Testing Laboratories in the various States to promote the accuracy and standardization of testing procedures. This work is under the supervision of Dr. O. J. Hummon. Limited survey testing with Leptospira antigens has also been recently undertaken by the Biologics Development Unit. In the new laboratory at Ames this unit will also be responsible for producing pilot lots of new diagnostic agents and biological products as methods of production are released from the research laboratories. They will also produce small batch lots of biologics such as mallein, johnin, and others that are not available commercially, and also products to be used for standardization purposes. Tuberculin formerly produced by the Agricultural Research Service is now purchased under government contract from commercial sources.

Serological testing is another important function of the Laboratory Services. The importance of the constant serological diagnosis of vesicular diseases such as vesicular exanthema and vesicular stomatitis and their differentiation from foot-and-mouth disease is well-known to all of you. This work is conducted in the Beltsville laboratory under the direction of Dr. E. W. Jenney. Serological diagnosis of anaplasmosis is another activity conducted at the Beltsville laboratory by Dr. W. H. Martin. This unit also tests all equine serum samples submitted from the various quarantine stations and other points for dourine and glanders as a service to the Animal Inspection and Quarantine Division. Recognizing the importance of serological typing to the formulation of sound control programs for salmonellosis of animals, the Animal Disease Eradication Division established on April 15, 1957, a cooperative program with the U. S. Public Health Service to supplement their activities in this field. An ADE bacteriologist, working under the direction of Dr. P. R. Edwards, Communicable Disease Center, Chamblee, Georgia, has been assigned the task of working exclusively in the identification of Enterobacteriaceae of animal origin. This will permit State Animal Disease Diagnostic Laboratories to submit their cultures for typing and study, thus contributing greatly to control programs for this important group of diseases.

Our Chemistry Laboratory is located in Washington under the direction of Mr. F. A. Spurr and is responsible for the testing of dips and disinfectants, preservatives in biologicals, and various chemical analyses.

The pathology and microbiology unit is concerned with diagnostic activities relating to microscopic and macroscopic histopathology and the isolation and identification of the causative agents of disease. This unit acts as a reference and confirmatory laboratory for both common and unusual disease conditions encountered in the field. It is also a repository for pathological materials, and is responsible for coordinating State and Federal activities in the field of animal disease diagnosis. Future plans call for the organization of teams of trained diagnosticians, who will be constantly available for field investigational work when diseases of unusual nature or high mortality or morbidity are encountered. Such teams will function in providing assistance during disease outbreaks, such as the outbreak of anthrax in Kansas and Oklahoma during the summer of 1957. Through the cooperation of the Plum Island Laboratory, the Division also plans to train selected diagnosticians in specialized procedures for the identification and eradication of foreign diseases that might make their entrance into the United States. A Manual and Directory of Animal Diagnostic Laboratories in the United States has recently been completed. This manual will be distributed to all field stations, animal diagnostic laboratories, State Veterinarians, and others interested in animal disease control programs. There are presently 158 animal diagnostic laboratories in this country, most of which are engaged in the diagnosis of diseases in all species of domestic animals.

In order to expand our laboratory services in the field of diagnostic pathology and microbiology, we established an interim laboratory facility at Ames, Iowa, in December 1957, under a cooperative agreement with Iowa State College. Work conducted in the interim laboratory at Ames includes diagnostic histopathology, bacteriology, virology, mycology, and serology. A program to isolate and type cultures of Mycobacterium tuberculosis from tissue specimens collected on the killing floor, for additional information on no-gross-lesion reactors, has been established. Bacteriological examinations of milk samples for the isolation of Brucella are being conducted to supplement data on serological tests. A repository is also maintained for cultures used in biological products production and testing. A project is also under way to detect Trichina in diaphragm specimens submitted from swine slaughter plants in various States.

A staff of nine, headed by Dr. M. J. Eggert, has been established at the ADE Interim Diagnostic Laboratory at Ames. Because of the limited facilities available, the interim laboratory cannot undertake extensive diagnostic programs. However, services are now available which were previously available to us only from other agencies in the Department, or from State laboratories that were in a position to lend assistance. Laboratory specimens for diagnostic purposes should in most cases be cleared for sending before being shipped. The mailing address of the Ames ADE Diagnostic Laboratory is: Dr. M. J. Eggert, Head Pathologist, ADE Diagnostic Laboratory, Veterinary Quadrangle, Ames, Iowa. At the time that the new laboratory is completed at Ames, the interim unit will be transferred into the new structure.

The Biologics Control Laboratory is a cooperative effort with the Animal Inspection and Quarantine Division. Laboratory services in this field have been quite limited in the past mainly because of a lack of adequate standards and facilities for this purpose. With the completion of the new laboratory at Ames, the needed facilities will be available, and at present the AIQ Division is establishing workable standards for key biologicals.

The Virus-Serum-Toxin law requires licenses to be issued for veterinary biologics that move in interstate and foreign commerce. These products must not be worthless, contaminated, dangerous, or harmful. To assure the safety and potency

of biologics, such a determination must first be made at the time licenses are issued by employing testing procedures to evaluate the products. The types of products now being presented for license and the problems encountered in continually assuring the livestock owners of safe, potent, and uncontaminated products have changed. The trend of industry is from the so-called "killed" products to the live and modified live virus products. In 1945, of the 763 licenses, only 81 were of the live virus type, whereas in 1958 it is estimated that of the 1,058 licenses, 350 will be of the live and modified live virus types. The volume of doses produced each year of these newer type preparations is tremendous, increasing from 288 million doses in 1945 to 2,146 million doses in 1955. The testing procedures and the amount of testing previously applied have been inadequate. Increased testing of veterinary biologics has been requested by livestock owners, State research and regulatory personnel, various poultry producer organizations, and others such as the United States Livestock Sanitary Association and the Animal Biological Industry itself.

Because of the lack of Federal testing facilities, it has been necessary to contract with sources outside the government to conduct stipulated tests under direction. This service has been exercised mostly for specific lots of products reported to have caused trouble when used in the field. Other products are being checked routinely by outside laboratories such as the work with erysipelas vaccines at the University of Nebraska. Some biologics testing work is carried out at the Beltsville laboratory including sensitivity tests on contract tuberculin and pullorum antigens as well as standard tests on Brucella strain 19 vaccines.

With the increased funds that have been requested, the work in the field of biologics testing will be considerably expanded, and the foundation laid for permanent establishment of the biological products testing and control laboratory at Ames.

The personnel needed to meet the laboratory services that have been outlined here today is indeed large. It is believed that much of this need should and can be met by Division personnel with experience and an interest in laboratory service and field work. Many of the activities proposed are in new fields and offer an exciting challenge. Qualified Division employees are presently being encouraged to undertake graduate study programs to better prepare them for work in the new laboratory at Ames.

Now a final word about the new laboratory. As most of you know it is to be located a few miles northeast of the city of Ames on a 318 acre tract of land. The laboratory compound will occupy approximately 20 acres and will contain the laboratory proper, designated the small animal laboratory, and three large animal laboratories. The remainder of the land will be used to quarantine and house large and small animals to be used in diagnostic and research work. Laboratory services for the ADE and AIQ Divisions will occupy approximately 20 percent of the total space, and will be divided into the various laboratory divisions discussed with you today. It is presently expected that the building will be completed in 1960. (Sketches of the new Ames Animal Disease Laboratory were shown and discussed.)

PUBLIC STOCKYARDS INSPECTION ACTIVITIES

Public stockyards inspection was authorized by the Act of May 29, 1884, creating the old Bureau of Animal Industry. The Act, among other things, specified that investigations were to be made of contagious, infectious and communicable disease along lines of transportation from all parts of the United States to ports from which livestock are exported, and provided for such disinfection and quarantine measures as may be necessary to prevent the spread of disease from one State or territory to another.

Contagious pleuro-pneumonia of cattle was the first disease eradication effort undertaken by the Department in cooperation with the States affected. Controlling the interstate movement of cattle through market centers greatly shortened the time required to completely eliminate the disease. This led to the first Order issued October 20, 1890, requiring inspection at public stockyards of cattle destined overseas. The discovery at that time that cattle ticks transmitted Texas or splenetic fever made this disease of first importance to be controlled by stockyards inspection. In 1897 inspection was extended to include sheep for scabies, and in 1903, cattle for scabies. The scope of work was further extended in 1905 to the inspection for all communicable diseases of all livestock received at public stockyards.

Since the beginning of livestock disease control and eradication work, the unrestricted movement of diseased animals has been recognized as one of the most important factors in the spread of disease. Due to the threat from abroad of foreign livestock diseases, particularly foot-and-mouth disease, proper and efficient inspection at livestock markets is more essential now than at any other time in the past. Of prime importance in coping with this and other dangerous communicable diseases are early detection and prompt diagnosis. For this reason, the inspection of livestock at market centers is almost indispensable in the control of disease. The sooner a disease is discovered and the affected animals isolated the fewer will be the number that become infected and exposed. By the same token, the sooner the disease is traced back to point of origin the less likelihood there will be of further dissemination of the disease from that locality. The value of the service to the livestock industry as a whole would be difficult to estimate.

Livestock at public stockyards come from widely separated areas and this inspection offers an excellent opportunity to examine for disease a cross section of the livestock population of the country almost daily at a minimum cost. Our greatest defense against the widespread dissemination of the disease may be found at public stockyards where inspection is maintained by employees who are trained to detect foot-and-mouth disease, vesicular exanthema, and other devastating maladies.

Livestock-inspection service is maintained at 59 stockyards in 57 cities. Veterinarians who, through years of experience, have become skilled in the detection of animals affected with disease or other abnormal conditions are constantly on duty examining the animals that pass through these stockyards each day. These veterinarians are assisted by laymen skilled in such work as the inspection of livestock, supervising the dipping of cattle and sheep for scabies, and cleaning and disinfecting premises, cars, and trucks used in the handling of diseased animals.

Insofar as possible all livestock that arrive at these market centers during daylight hours are inspected at the time of unloading, while animals that are unloaded and yarded during the night are inspected early in the morning before the trading commences. If signs of any communicable disease are detected, all infected and exposed animals are promptly segregated and treated or otherwise handled in accordance with Department regulations. The inspectors are constantly on the watch for animals showing any symptoms suspicious of foot-and-mouth disease or vesicular exanthema.

The livestock sanitary official of the State in which a diseased shipment originates is notified as well as the animal disease control field station in that State. In this way centers of infection are located, and the spread of disease to other herds and premises is frequently prevented by the prompt application of appropriate sanitary control measures. Instances are not uncommon in which the detection of disease in a shipment at a public stockyard is the owner's first inkling of the existence of infection on his premises.

Not only are incoming shipments of livestock inspected, but a reinspection is made of outgoing shipments, both to detect disease and also to determine whether there has been compliance with certain requirements, such as the tests for tuberculosis and brucellosis, dipping for scabies, and immunization against hog cholera.

The very large scale on which this livestock-inspection service is conducted is indicated by the fact that each year there pass through these public markets for slaughter or other purposes between 70 and 75 million livestock.

Interstate shipments of livestock for immediate slaughter may be made to public stockyards under regulations that are less restrictive than if the animals are to be forwarded direct from a country point in one State to a country point in another State for feeding, breeding, or dairy purposes. If, however, it is found after arrival that some of the animals would sell to better advantage for purposes other than slaughter, they then must meet the same test requirements that would have been applicable had they been shipped direct to a country point in another State.

Department employees at public stockyards supervise the application of the tests for tuberculosis and brucellosis and see that those animals which do not pass a satisfactory test are removed from the consignments to which they belong and are slaughtered or otherwise properly disposed of, as may be prescribed in the regulations. The bulk of all the cattle that react to the tests for tuberculosis and brucellosis in the present cooperative Federal and State eradication campaign are sent to these public markets for slaughter. The employees at the markets exercise the utmost vigilance to see that the identity of these reactors is maintained and that they are penned separately in the yards and required to be disposed of for immediate slaughter at establishments operating under Federal meat inspection.

Whenever disease is found in a shipment of livestock arriving at a Federally inspected stockyards steps are taken immediately to see that the pens occupied by the animals, the car or other vehicle in which they have been transported, and the yards through which they have been handled at the point of origin--and en-route if they have been unloaded for feed, water, and rest-- are properly cleaned and disinfected.

Another activity over which the Department exercises supervision at public stockyards is the immunization of swine against hog cholera. Included in receipts at many of the large markets are a considerable number of pigs which are not in first-class slaughter condition. Under the regulations in effect it is possible to sort out such animals from the consignments in which they are received and sell them for interstate shipment to country points for further feeding to make them suitable for slaughter, provided they are properly treated against hog cholera.

Such swine may be moved interstate from public stockyards for any purpose only to States the laws, rules and regulations of which provide for the segregation and quarantine of imported hogs for a period of not less than 3 weeks. In order to be eligible for such shipment certain inspection and certification requirements must be met. The swine must be inspected by a Federal veterinary inspector at the yards. If they are found free from symptoms of cholera or other communicable diseases and in a thrifty condition, they must be treated by an accredited veterinarian under Federal supervision, provided the temperature of each animal is taken before treatment and that only those with a temperature of less than 104°F. shall be certified for interstate movement. If the inspector finds any hogs affected with cholera, the entire lot to which they belong may be treated by a competent veterinarian under Federal supervision and held in a portion of the yards set aside for that purpose. At the expiration of not less than 30 days, if no signs of disease are observed on examination of the hogs, they may be released for shipment. All immunized swine must be disinfected by dipping in or spraying in a bath containing a 2 percent solution of a permitted cresylic disinfectant, must be accompanied by a certificate issued by a Federal veterinary inspector, and must be transported in cleaned and disinfected cars or other vehicles.

Consignments of sheep and cattle received at public stockyards in which scabies infection is found or which have been exposed to the disease, if not sold for immediate slaughter, are dipped in accordance with applicable regulations under Federal supervision. Included in the receipts of sheep at these stockyards are many animals not in a fit condition for slaughter. These are sorted out of their consignments and sold for breeding purposes. Many of them are dipped as a precautionary measure to comply with the requirements of the State to which they are destined or at the request of the purchasers, even though there is no actual knowledge that they have been exposed to scabies. This dipping also is performed under Federal standards and supervision.

In the past, when practically all livestock moved to market by rail, arrivals could be anticipated in advance through the cooperation of transportation lines and stockyard officials. This made it possible to integrate an efficient inspection service with the orderly unloading, yarding, weighing, and disposal of all animals. Now the heavy receipts by trucks make it exceedingly difficult to assure that every animal is properly inspected. These unscheduled arrivals in lots, varying from one animal to large truck loads with the capacity of a railroad car, pose a problem at the stockyards where too often the design, size, and arrangements of facilities are those developed for rail transportation, and which have had to be remodeled to take care of truck shipments. Another important factor from an inspection standpoint is that dock facilities for loading and unloading truck and rail shipments are necessarily at different locations, thus requiring the services of two or more inspectors where formerly one sufficed.

Specifically Approved Stockyards: Under the new Federal regulations to prevent the spread of brucellosis and paratuberculosis, effective January 1, 1957, provision was made for specifically approved stockyards. At these markets the cost of inspection service is paid by the State. Operators of such yards, which are usually auction markets, sign an agreement to permit no cattle to be removed without the proper certificate or other form of release issued by the inspector, to segregate brucellosis and paratuberculosis reactors until they are sold for slaughter, furnish suitable cattle chutes for restraining animals, laboratory space for conducting brucellosis testing, provide adequate facilities and services for the cleaning and disinfection of trucks or other vehicles transporting such reactors and otherwise cooperate with the State and Federal officials to effectuate the provisions of the brucellosis and paratuberculosis regulations. As of May 1, 1958, 1,250 livestock markets have been specifically approved by the Director of the Animal Disease Eradication Division. These specifically approved markets operating under veterinary inspection at State expense to enforce brucellosis and paratuberculosis regulations, should not be confused with public stockyards where Federal inspection is maintained and all animal quarantine laws and regulations are enforced.

Posted Stockyards: This is a term used for a stockyard which has been posted by the Secretary pursuant to the Packers and Stockyards Act of August 15, 1921, regulating the business practices of stockyard owners, sales agencies and others operating at a stockyard. Apparently there is some misunderstanding by livestock people, stockyard employees, and occasionally State and Federal inspectors, regarding the inspection service of the Animal Disease Eradication Division, ARS, and the Packers and Stockyards Division, AMS. Most of the stockyards with ADE inspection also are posted under the Packers and Stockyards Act.

There need be no confusion with respect to the services these two agencies provide. The Packers and Stockyards Division is concerned primarily with trade practices such as fees for selling livestock by commission companies, service charges like yarding, weighing, feeding, dipping, dehorning, branding, etc., furnished by the yard company and vaccination, testing and otherwise treating animals by practitioners. Whereas, our Division's principal interest is in the health of the animals and in taking steps to prevent the dissemination of disease in interstate commerce.

To summarize: the purpose of public stockyard inspection is (1) to restrict the movement of diseased animals, (2) supervise the treatment and proper disposition of diseased animals, (3) notify States of origin of diseased animals received, (4) supervise the cleaning and disinfection of infectious stockyard pens and facilities, and transporting cars, trucks, and other vehicles, (5) issue certificates for the interstate movement of animals which have been inspected and found to be apparently free of any contagious, infectious, or communicable disease, (6) supervise the dipping, vaccination, and testing of animals prior to shipment.

SCREWWORM ERADICATION PROGRAM

The objectives of the Federal-State Cooperative Screwworm Eradication Program are: (1) to eradicate screwworms from all the southern States east of Louisiana and Arkansas, and (2) prevent reinfestation of that area.

The methods of attaining these objectives are to overwhelm the native screwworm population with sterile male flies and prevent the movement of infested animals into the Southeast.

Sterile male flies will be released continuously and systematically over the infested area until eradication is accomplished. The female screwworm fly mates only once and when mated to a sterile male will lay only infertile eggs. Most of the eradication effort will be confined to Florida because cold weather during the winter months usually kills out all screwworms in the Southeast except those in peninsular Florida. In order to accomplish eradication it will be necessary to rear and sterilize a minimum of 50 million flies (25 million males) per week and disperse them at an average rate of 500 sterile males per square mile per week, over an area of 50,000 - 75,000 miles.

Inspection stations have been established along and between the Mississippi and Pearl Rivers where all livestock enroute from the infested areas of the West are inspected and properly treated before moving into the Southeast.

ORGANIZATION

Funds were appropriated by Congress on August 28, 1957, to begin a screwworm eradication program, a cooperative Federal-State effort. On January 1, 1958, Dr. Robert S. Sharman was placed in charge of the Project for the Animal Disease Eradication Division in Washington, D. C.

The Screwworm Eradication Program is a cooperative Federal-State endeavor. The program in Florida is a joint responsibility of the Animal Disease Eradication Division, representing the U. S. Department of Agriculture; and the Florida State Livestock Board, representing the State of Florida. Dr. T. W. Cole, Veterinarian in charge of all Federal animal disease eradication activities in Florida, and Dr. C. L. Campbell, State Veterinarian representing the State Livestock Board, are responsible for the over-all direction of the program. The actual operation of the screwworm eradication activities is the joint responsibility of Dr. D. L. Williams, Project Leader, representing the U.S.D.A. Animal Disease Eradication Division, and Dr. M. E. Meadows, State Director, representing the State Livestock Board.

The Screwworm Eradication Program is divided into five major units or activities:

Fly Production - C. L. Smith in charge.

This unit is responsible for the rearing of approximately 50 million screwworm flies per week. This includes the maintenance of a large fly colony to produce an adequate supply of eggs, the rearing of the larvae, and the aging of the pupae.

This is a 24-hour day, 7-day week operation and requires the services of about 180 employees.

Field Operations - S. C. Gartman in charge.

This unit is responsible for the activities of all field personnel engaged in quarantine activities, livestock inspections, screwworm surveys, sterilization, packaging and distribution of sterilized flies to dispersal centers and the aircraft operations involved in the dispersal of sterilized flies over the screwworm infested areas.

Maintenance and Facilities - C. N. Husman in charge.

This unit is responsible for design, development, construction, installation, and maintenance of all equipment and facilities used in the production and distribution of sterilized screwworm flies.

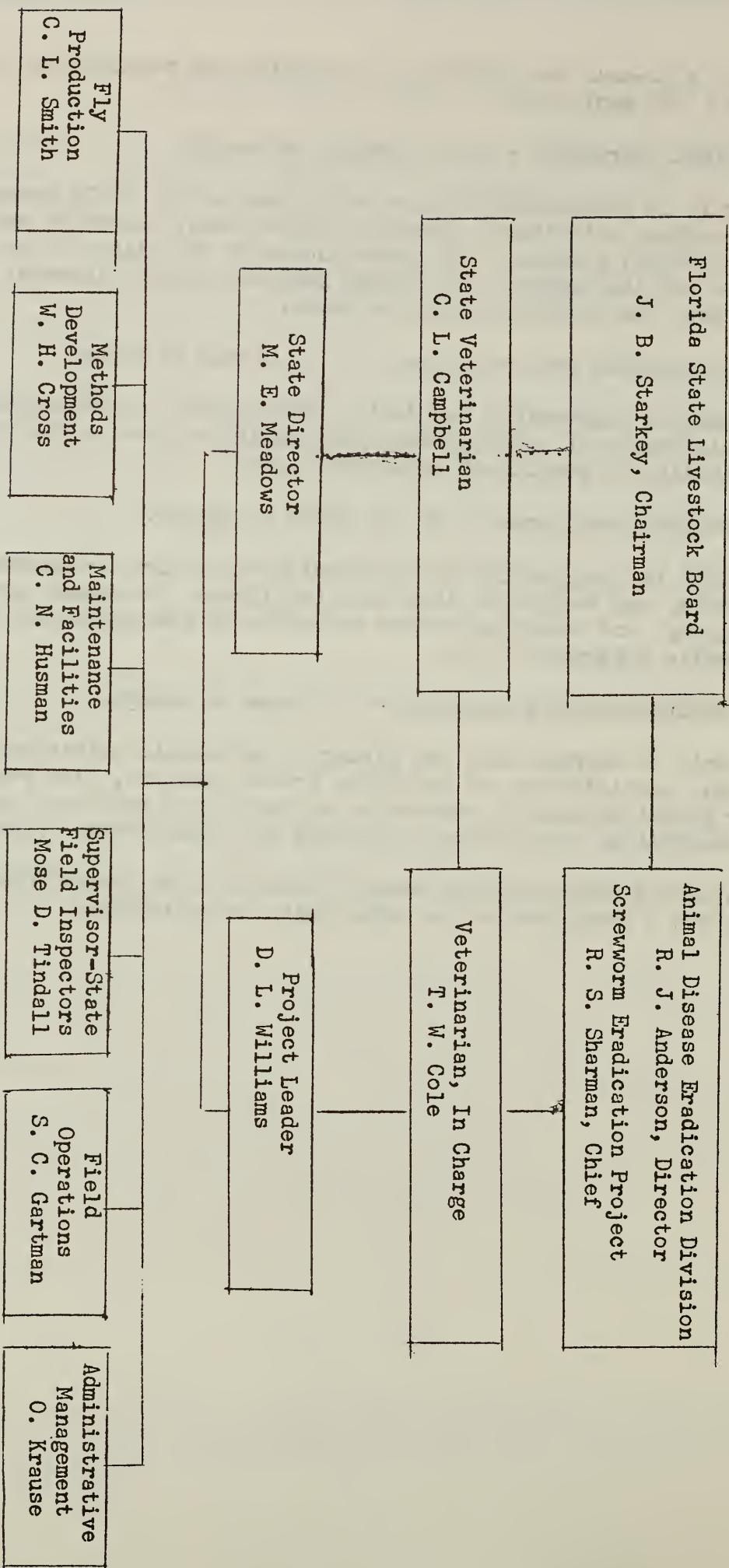
Methods Development - Wm. H. Cross in charge.

This unit is responsible for the development of new or improved methods, materials, and techniques that will facilitate operations, increase efficiency, and otherwise effect economies in the production and dispersal of sterile screwworm flies.

Administrative Management - O. Krause in charge.

This unit is charged with the hiring of personnel, maintaining personnel records, certification of payrolls, travel vouchers, time reports, and other fiscal documents, purchasing equipment and supplies, property accountability, inventories, preparing and maintaining budgetary records.

The attached organizational chart illustrates the Federal-State relationship, and a breakdown to the major units or activities.



THE GENERAL RESPONSIBILITIES OF THE SPECIAL DISEASES
ERADICATION SECTION ARE AS FOLLOWS:

1. PLANNING. Participates in the planning and development of disease control and eradication and allied programs of the Division.
2. PROGRAM DEVELOPMENT. Develops and recommends cooperative programs of inspection, quarantine, testing, diagnosis, disinfection, condemnation and disposal designed to control and eradicate cattle-fever ticks, scabies, bluetongue, scrapie, and other livestock diseases not assigned to other Sections of the Division.
3. ANIMAL AND POULTRY DISEASE INFORMATION. Collects and correlates animal and poultry disease morbidity and mortality information available to the Agricultural Research Service, including that available through other Federal and State agencies. Disseminates such information in systematic reports designed to be of maximum assistance to livestock and related industries, practicing veterinarians, and Federal and State agencies concerned with the prevention, treatment, control, or eradication of animal and poultry diseases.
4. AUTHORITIES AND PROCEDURES. Develops and recommends policies, plans, regulations and procedures required for the administration of assigned functions and responsibilities.
5. COOPERATIVE AGREEMENTS. Originates and reviews proposals relating to and develops and recommends the undertaking or modification of cooperative agreements and similar authorizations providing for Federal-State cooperation in the conduct of special diseases control and eradication and animal quarantine measures.
6. TECHNICAL ASSISTANCE. Provides technical advice and assistance to officials of the various States in the planning and development of requirements and measures best suited to the conduct of assigned cooperative disease control and eradication programs in their respective States.
7. REGULATORY MEASURES: Collaborates with representatives of the various States in formulating regulations and procedures for controlling the movement of livestock to prevent the spread of cattle-fever ticks, scabies, bluetongue, scrapie, and miscellaneous other livestock diseases.
8. LIAISON. Maintains liaison with other Federal and State agencies and public and private organizations and associations on matters relating to functions of the Section.
9. FIELD COORDINATION AND DIRECTION. Develops procedures for exercising technical direction over and coordinating field activities of the Section.

SPECIFIC RESPONSIBILITIES OF THE SPECIAL DISEASES ERADICATION SECTION

SCRAPIE ERADICATION

NATURE OF DISEASE

Scrapie is a chronic infectious disease of sheep and goats characterized by an unusually long period of incubation, up to three years or more. Symptoms include intense pruritus (the itching and rubbing causing wool to be scraped off), progressive locomotor incoordination, weakness, paralysis, and death.

Diagnosis of scrapie is based on clinical symptoms and laboratory findings. Brain tissue from the diseased animal is examined microscopically for the presence of vacuoles within the nerve cells. The suspicious animal should not be slaughtered until the case is advanced sufficiently so that a satisfactory specimen of brain tissue can be obtained for laboratory examination. Brain tissue for histologic studies should be placed in 10 percent formalin and should not be frozen. The disease should be differentiated from listeriosis, Aujeszky's disease, rabies, pregnancy toxemia, and scabies.

Scrapie is believed to be caused by a filterable agent of unusual properties. Like some viruses, the agent survives for an extended period (at least two years) when held at temperatures far below zero. It differs from ordinary viruses in that it can survive hours of boiling and is resistant to disinfectants that destroy them.

Muscular degeneration, similar to muscular dystrophy in man, has been described by two British medical doctors and a veterinarian as a possible explanation of the symptoms seen in scrapie rather than involvement of the nervous system. We are making a most meticulous examination of scrapie-infected sheep in an effort to determine if there is any basis for this theory.

Another theory is that the disease may be hereditary and that undue stress may cause symptoms to develop.

British workers have injected material from sheep infected with scrapie into other sheep and have transmitted the disease through 16 serial passages. They have also transmitted the disease from sheep to goats and back to sheep, and from artificially infected goats to other goats. French workers have also transmitted scrapie to sheep and to goats by injecting brain and spinal cord tissue from scrapie-infected sheep, and in both countries experimental evidence has shown that the disease can be spread by contact.

Efforts to develop a diagnostic test or a vaccine have not been successful and no effective treatment has been found.

ECONOMIC IMPORTANCE

Sheep showing symptoms of scrapie invariably die. The disease has been, in this country, more prevalent in valuable breeding animals of imported stock. Due to the extensive interstate commerce in such animals and the rapid manner in which they are distributed over large areas, the problem is serious. Since the disease seldom affects sheep under 18 months of age, it would be expected to be a less serious problem among feeder lambs (except for those born weak or orphaned because their dams were affected by the disease). The purebred sheep industry suffers very serious loss when valuable bloodlines are destroyed and because quarantine restrictions must be placed on its flocks. It has been quite difficult to estimate the morbidity of scrapie even in countries where the disease is common. Owners tend to be secretive and may deny that their flocks are affected with the disease. It is particularly urgent that every effort be made to eradicate scrapie before losses pyramid here as they have in countries where the disease has been widely disseminated.

HISTORY

Although scrapie has been known in Europe for over 200 years, it was not until 1947 that the disease was diagnosed in this country--the first cases being reported in Michigan in a flock that consisted largely of imported sheep or their progeny. Scrapie had been reported previously in Canada in 1939, in Suffolk sheep imported from Scotland. Sheep of the Cheviot and Hampshire breeds also have been found to be infected in Canada. Other countries in which scrapie has been reported include France, Germany, Poland, Austria, Hungary, Australia, and New Zealand. Australia and New Zealand acquired the disease through the importation of Suffolk sheep from Great Britain. Both countries believe they have eradicated scrapie by following a slaughter program similar to the present program in this country. They have also--as has Canada--prohibited further importation of British sheep in order to prevent the reintroduction of the disease.

In the United States scrapie has been diagnosed in a total of 66 flocks in 57 counties in 19 States. These include Texas, Georgia, Iowa, Missouri, Virginia, Wisconsin, and Utah, with one infected flock each; New York, Oregon, Tennessee, North Carolina, Michigan, Connecticut and Alabama, with two infected flocks each; Illinois with seven flocks; California with six; Ohio with ten; and last--and with most--Indiana with a total of twenty-one infected flocks. Three of the 66 flocks have been of the Cheviot breed, the remainder have been Suffolks. No breeds of sheep are considered to be immune to scrapie. In France (where British breeds are not common) the disease is not confined to any particular breeds.

CURRENT ERADICATION PROGRAM

The present State-Federal cooperative program, which provides for inspection, diagnosis and quarantine, and for slaughter of infected and exposed sheep and goats, was developed through review of information from Europe, consultation with European and Canadian officials, and through meetings with research workers, livestock sanitary officials, and members of the sheep industry of this country.

The eradication program places emphasis on infected flocks, which are slaughtered in their entirety. Exposed sheep moved from the infected flock (and their immediate progeny) are slaughtered also. The flocks in which these animals are, or have been, located are inspected for a period of 42 months following removal of the exposed animals.

Flocks which have been determined to be the origin of infection are handled in the same manner as infected flocks.

The Federal Government may indemnify owners for animals destroyed because of scrapie a maximum of \$25 each for grade animals and \$75 each for pure-bred animals. This amount is based on 50 percent of the difference between appraisal and salvage and may be paid whether or not the State also pays indemnity.

Scrapie is a particularly difficult disease to handle. Its onset is insidious. The early symptoms are difficult to detect and the affected animal may actually appear to have recovered, only later (perhaps after several months) to begin to show the more obvious symptoms. Early symptoms include nervousness, apprehension and increased excitability; the head and ears may be carried in unnatural positions, and there may be a loss in condition in spite of a good appetite. As the disease progresses the animal rubs against fixed objects and may nibble at itself and pull wool. When the affected animal rubs or is being rubbed, the scratch reflex, characterized by extension of the head accompanied by nibbling movements of the lips and vigorous wagging of the tail, usually is evident. Later symptoms include debility, incoordination and finally death.

There is no denying that scrapie appears more frequently in certain breeds and in certain bloodlines within these breeds. However, this is difficult to evaluate since particular bloodlines have become very popular in recent years and breeders naturally seek those that are currently in demand.

It is apparent that scrapie is a disease that is spread by the movement of sheep from certain flocks that have become reservoirs of infection, rather than spreading readily to adjacent farms as do such diseases as contagious ecthyma and scabies. This is brought out by the fact that the 66 scrapie-infected flocks in this country have been found in 57 counties in 19 different States. The Pavy flock in Indiana, for example,

is believed to have been responsible for spreading the disease into 9 flocks in Indiana, 2 flocks in Alabama, 2 flocks in North Carolina, and 1 flock in Missouri. There would probably have been many more infected flocks if we had not slaughtered the Pavy flock and the exposed sheep sold from it. Other reservoirs include the McIntyre flock in Indiana, the Broadmead Farms flock in Oregon, and the T. L. Patrick and P. J. Rock flocks in Canada. Infected animals were never observed in the Broadmead Farms flock but, inasmuch as sheep from this flock developed scrapie in 2 flocks in Oregon and 3 flocks in California, it was determined that the Broadmead Farms flock was disseminating the disease and, for this reason, it was treated as an infected flock and slaughtered.

RESEARCH

Research on scrapie is time consuming and costly. It required time to span the long incubation period, large numbers of animals to get the required number of "takes," space in which to maintain and segregate flocks used in experimentation, and personnel to care for such animals and to do the necessary technical work. Research is not being carried on in France at this time, but the subject is very much alive in Canada and in Great Britain. No research projects are under way in the United States; however, we have sent an American Veterinarian to do cooperative research work with the British.

VISUAL AIDS

- A. Film, "Scrapie, an Obscure Disease of Sheep."
- B. Slides, "Vaculation of neurons of sheep affected with scrapie."

REFERENCES

- A. Article on scrapie in the Report of Committee of the United States Livestock Sanitary Association, 1954, "Foreign Animal Diseases."
- B. ADE Handbook, "A Study of the Epizootiology of Scrapie in the United States."
- C. ADE Branch Notice dated September 20, 1955, "Information secured from Europe concerning scrapie."
- D. ADE Division Notice dated March 18, 1957, "Additional Information secured from France concerning Scrapie."
- E. ARS Special Report "SCRAPIE" published in October 1957.
- F. Current "Animal Morbidity Reports."
- G. 9CFR, Part 79--Scrapie in Sheep.
- H. 9CFR, Part 54--Animals Destroyed Because of Scrapie.

DOURINE ERADICATION

NATURE OF DISEASE

Dourine is a usually chronic, communicable disease of horses and asses caused by Trypanosoma equiperdum, a protozoan of microscopic size. The disease is characterized first by a local inflammation of the external genital organs, and later by a cutaneous eruption and symptoms of nerve paralysis.

None of the symptoms described is pathognomonic for dourine when taken individually, but collectively they are quite helpful in reaching a diagnosis.

Dourine was first diagnosed by means of history and clinical symptoms, later augmented by microscopic demonstration of the trypanosome, morphological examination of the blood, agglutination, precipitation reaction, fixation of lipoids, agglomeration, allergic methods, and by experimental inoculation.

In 1912 the complement-fixation test was made applicable to the diagnosis of dourine and has been the method of choice for many years in the United States and in other countries. This test gives a specific group reaction for the genus Trypanosoma.

In tropical regions differential diagnosis of dourine from nagana, surra, and mal de caderas may be difficult. In regions where these diseases do not exist, the initial stage of dourine may be mistaken for traumatic inflammation of the genitals, for injury during coitus, for cases of glanders and purpura hemorrhagica when these diseases involve swelling of the lower abdomen, and from lumbar, facial, or other types of paralysis not of dourine origin.

ECONOMIC IMPORTANCE

A mortality of 50 to 70 percent has been reported in animals affected. Losses, aside from mortality, include loss of flesh, interference with breeding and herd management programs, and difficulty with the movement of equines due to the necessary quarantine restrictions.

HISTORY

Dourine was first described by Ammon from his experience in Prussia in 1796-1799. The nature of the etiological factor was indicated by Rouget in 1894. Until the middle of the last century dourine was widely distributed throughout Europe. More recently it has been indigenous only in certain southern and eastern countries of Europe, but is more common in other continents. The disease has appeared in North and South Africa, Asia, Asia Minor, Syria, India, Java, Australia, South America, and North America. The spread of dourine has been enhanced by the extensive movement of equines such as takes place during time of war, etc.

In Canada, dourine appeared in 1904 and was eradicated in 1920. In Mexico, dourine is widely spread, and along the Mexico-United States border has been and continues to be a very serious threat to susceptible animals in this country.

In the United States, dourine was first recognized in Illinois in 1886, after being introduced by an imported French stallion. The disease was brought under control after being detected at irregular intervals in Nebraska and South Dakota. In 1906 a new center of infection developed in Iowa and was not curbed until 1911.

By means of the complement-fixation test positive dourine reactors have been found over a large area including Arizona, California, Colorado, Idaho, Iowa, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Virginia, and Wyoming.

Dourine has been eradicated from this country; however, reactors are found from time to time in areas bordering the Republic of Mexico--particularly among horses on Indian reservations in those areas.

CURRENT PROGRAM

Federal-State cooperative eradication includes inspection, collection of blood samples, testing of such samples with the complement-fixation test, and destruction of all animals positive to the test. An occasional animal may apparently recover, but it remains a potential spreader. Spaying reactors mares and castrating reactor stallions is only a temporizing method of control.

When dourine is suspected the proper officials should be notified immediately. Veterinarians should be prepared to obtain blood samples from suspicious equines so that serum samples can be sent to the laboratory for diagnosis by the complement-fixation test.

REFERENCES

- A. Farmer's Bulletin No. 1146, "Dourine of Horses."
- B. Current "Animal Morbidity Reports."
- C. 9CFR, Part 75--Dourine in Horses and Asses.

SCABIES ERADICATION

NATURE OF DISEASE

Scabies is a contagious skin disease of animals caused by minute, parasitic mites, hardly visible to the unaided eye, living on or in the skin. It spreads very rapidly, is characterized by inflammation, exudation and thickening of the skin, and results in intense itching, loss of wool or hair, and emaciation. Most domestic animals are susceptible. Of principal interest to agriculture are sheep and cattle.

Scabies is not difficult to diagnose--the veterinarian has only to demonstrate and identify the causative mite. Veterinarians and inspectors should be prepared to take skin scrapings in case a suspicious skin condition is encountered and should have a hand lens available for studying external parasites. Recognizing the disease is more difficult in recently infested animals and during periods when the mites are less active, particularly during warm weather.

Scabies usually follows a customary pattern of spread. It is comparatively easy to eradicate with the dips available to us, providing all animals in infected and exposed herds and flocks are properly dipped.

Scabies is spread through changes of ownership which result in the introduction of infected animals into herds or flocks; through market centers, sales rings, livestock shows, stockyards, etc., and is kept in existence by undetected and untreated reservoirs of infection.

ECONOMIC IMPORTANCE

Cattle and sheep cannot be raised profitably when affected by scabies. Great monetary losses are suffered in decreased meat and wool production, arrested development of young animals, poor physical condition of affected animals predisposing them to other diseases, and damage to hides. Quarantine restrictions increase the cost of shipping and add to the losses suffered by the industry. Unless properly treated, affected animals may die. The disease in the past has caused tremendous losses in this country.

HISTORY

Scabies has been known from the earliest times and is mentioned in Arabian medicine and in the Old Testament.

Psoroptic scabies has probably been a problem in the United States since the first sheep and cattle were introduced into this country, and has been very wide spread from time to time. Efforts to eradicate the disease were begun more than 50 years ago. A Department of Agriculture bulletin on sheep scabies published in 1898 contained excellent illustrations of scabby sheep, the causative mites, and equipment needed for treating ovines by dipping. At the turn of this century Federal quarantines were placed

upon the western half of the United States. An active eradication program was developed and gradual progress was made in the western range areas. The Federal quarantine was removed from counties and States as the disease was eradicated.

However, reinfestation of sheep and cattle in range areas was not uncommon and it was not until some 20 years ago that the eradication program in the West neared completion. As the disease became less common in these areas more attention was directed toward its eradication in the Midwest and East.

The Psoroptic Sheep Scabies Eradication Program was implemented a few years ago in Louisiana and in Mississippi, particularly in certain parishes and counties that had been under Federal quarantine since 1918 and 1927. This all-out drive has been quite successful and has eliminated one of the important reservoirs of infection. The Federal quarantine in both Louisiana and Mississippi was lifted July 8, 1957.

Unfortunately the general outlook in other States, particularly those of the midwestern farm areas, is not nearly so good. The disease has probably been present in the majority of the problem States almost continuously since before 1900. Active eradication programs have been followed from time to time in a number of those States but, for the most part, have afforded only temporary relief.

A comparison of the annual report for 1957 with that for 1956 indicates there was an increase of 12 percent in the number of infected flocks reported and an increase of 8 percent in the number of counties involved. The report of 682 infected flocks in 289 different counties (an average of approximately 2.3 infected flocks per county) suggests that the disease is rather wide spread in certain areas. In addition to the information included in this report, psoroptic sheep scabies was diagnosed in 150 consignments of sheep received at public stockyards under supervision of the Animal Disease Eradication Division.

Following the eradication of psoroptic cattle scabies from the western range areas the disease has been only infrequently seen. The first major outbreak in recent years was reported in the winter of 1953-1954. A number of infected herds were found in southeastern Colorado. From there the disease spread to Arizona, California, Oklahoma, Texas, and Missouri. The disease also was reported in Wisconsin.

During the following winter psoroptic scabies was found at the Chicago Union Stock Yards in Colorado cattle. Infected herds also were found in Colorado, Kansas, Texas, Nebraska, and Kentucky. During fiscal year 1956 infected herds were again found in Colorado, as well as in Kansas, Texas, New Mexico and Iowa. During fiscal year 1957 infected animals were found in Colorado, Wyoming and Ohio, and in cattle from Kansas at the Chicago Union Stockyards, and at the St. Joseph Stock Yards, and at

Denver, Colorado, in a bull from Iowa. During fiscal year 1958 the disease was found in two herds in Colorado and in one herd each in Kansas and Iowa.

A Federal quarantine, as well as a State quarantine, is in effect in Colorado covering Crowley County, and a portion of Pueblo County.

CURRENT PROGRAM

The Federal-State cooperative program provides for inspection of sheep and cattle for scabies and for treatment of infected and exposed animals. Quarantines are imposed as required.

Experience has shown that both Federal and State authority are needed for satisfactory control, whether the proposed movement of animals is intended to be interstate or intrastate. In some cases, State quarantines alone have been unable to control the spread of scabies. On the other hand, Federal authority is incomplete within the State.

Animals affected with scabies are diseased and are prohibited by Federal regulations and law from moving interstate. Each State also has regulations concerning the handling of infected animals and movements from affected herds and flocks.

Veterinarians and inspectors should be alert for the symptoms and lesions of the disease not only in suspicious herds and flocks but also on routine inspections at concentration points, prior to issuing health certificates, etc.

It is very important to determine the origin of infection and to locate animals moved from infected and exposed herds and flocks in order to treat all reservoirs of infection and thus carry out the goal of the Scabies Eradication Program, which is to completely eradicate the disease from the United States.

As an important aid in the training of personnel, arrangements made with the Animal Disease and Parasite Research Division have enabled us to provide on-the-spot training at Albuquerque, New Mexico, to over 80 State and Federal employees.

VISUAL AIDS

- A. Film, "Psoroptic Sheep and Cattle Scabies."
- B. Kit of 45 scabies slides.

REFERENCES

- A. ADE Branch Notice dated October 12, 1955, "A Review of the History and Incidence of Sheep and Cattle Scabies in the United States."

- B. Current "Annual Report of Cooperative State-Federal Sheep and Cattle Scabies Eradication."
- C. Farmers' Bulletin No. 1085, "Hog Lice and Hog Mange."
- D. Farmers' Bulletin No. 1017, "Cattle Scab."
- E. Farmers' Bulletin No. 713, "Sheep Scab."
- F. Current "Animal Morbidity Reports."
- G. 9CFR, Part 73--Scabies in Cattle, and Part 74--Scabies in Sheep.

BLUETONGUE

NATURE OF DISEASE

Bluetongue is an acute, infectious disease of sheep and, to a much lesser degree, of cattle. It is characterized by a rise in temperature, lameness, hemorrhagic inflammation of the mucous membranes of the mouth, edematous swelling of the head parts, and a cyanotic discoloration of the tongue. The disease is caused by a filterable virus and spread by an insect vector.

A tentative diagnosis of bluetongue should be based on symptoms, lesions, history and spread. Bluetongue is a seasonal disease which usually appears rather suddenly in midsummer and fall, followed by a rather rapid buildup, and disappears when the frosts of winter cause the vector to become inactive. The disease does not spread in the absence of the vector. In warm climates the vector (Culicoides variipennis) may be active throughout the year and clinical cases of bluetongue may be seen the year round.

The inoculation of susceptible sheep with blood collected from animals in the early stages of the disease (preferably those with high temperatures) is the most satisfactory means of confirming a clinical diagnosis of bluetongue. At present there are no other dependable means of diagnosis; however, a serological test is being perfected.

Bluetongue must be differentiated from certain stages of other diseases including photosensitization, contagious ecthyma, "stiff-lamb disease," pneumonia, Rift Valley fever, founder, and foot-and-mouth disease.

ECONOMIC IMPORTANCE

Bluetongue is becoming an increasingly serious problem in the United States. Morbidity in affected flocks varies widely--being anywhere from 2 to 50 percent--and may approach 100 percent. Many of the cases may be subclinical. The mortality is also quite variable--being between 1 and 30 percent of the diseased animals. In some flocks the mortality is much higher, and in Africa is often from 40 to 90 percent. Losses aside from mortality include loss of flesh and weight, damage to wool clip, and interference with reproduction, with flock management programs, and with the marketing and movement of animals.

HISTORY

Bluetongue was originally reported in the Union of South Africa where it was identified as a filterable virus disease in 1905 and has occurred there and caused serious losses since the latter part of the 19th century. The disease has been studied extensively in the Union of South Africa, at Onderstepoort, and these studies have provided virtually all the fundamental information about it. Bluetongue has occurred in Southwest and East Africa, in Northern and Southern Rhodesia, as far north as French Sudan to the west and Abyssinia to the east, and has also been mentioned in reports from Cyprus, Israel, Turkey, Palestine, Syria, Portugal, Spain, and Morocco.

The disease has probably been present in the United States for a number of years, but received first mention in Texas in 1948 under the name of "soremuzzle." Since then the clinical diagnosis of bluetongue in California, Arizona, Utah, Colorado, New Mexico, Texas, Oklahoma, Missouri, Kansas, Nebraska, Nevada, and Oregon has been confirmed by laboratory studies and cases of the disease in other States have been suspected.

CURRENT PROGRAM

The Department of Agriculture has cooperated with biological houses, State officials, sheep owners and others in the diagnosis of bluetongue and in the production, testing and field use of a vaccine for its prevention. The vaccine became available for field use in 1954. It has been widely used since that time.

When bluetongue is suspected the proper officials should be notified. Veterinarians should be prepared to collect blood samples from suspect sheep and cattle for forwarding to the Animal Disease Research Laboratory in Denver, Colorado, for inoculation into test sheep.

Good nursing and symptomatic treatment is recommended. Since heat and sunlight aggravate the condition, infected animals should be kept cool and in the shade. Infected animals should not be handled roughly or driven, particularly on hot days.

Control procedures include vaccination against bluetongue in areas where the disease is endemic and protection against the insect vector.

Although the literature contains references to the occurrence of clinical bluetongue in cattle, the disease has not been diagnosed in this species in the United States.

VISUAL AIDS

- A. Film, "Bluetongue, Catarrhal Fever of Sheep."
- B. Kit of 25 bluetongue slides.

REFERENCES

- A. Article on bluetongue in the Report of Committee of the United States Livestock Sanitary Association, 1954, "Foreign Animal Diseases."
- B. Current annual report of "The Incidence of Bluetongue as Reported in the United States."
- C. Current "Animal Morbidity Reports."
- D. "Losses in Newborn Lambs Associated with Bluetongue Vaccination of Pregnant Ewes" (Jour. A.V.M.A., Sept. 1955).

ANIMAL MORBIDITY REPORTING

More than 35 years ago, the secretary of the United States Livestock Sanitary Association urged that national veterinary vital statistics be collected and distributed. The recommendation was based on the studied conclusion that such veterinary medical intelligence is essential in order to apply necessary disease control measures. The idea never lacked moral support, but for a long time it was without funds and a central agency to accomplish the task.

Animal morbidity and mortality reporting is not in itself a preventive against the inroads of animal diseases, but it is one of the important foundation stones in a sound structure of animal disease prevention, control, and eradication. The U. S. Livestock Sanitary Association, the American Veterinary Medical Association, and several other livestock industry groups have recognized the need for such a service and, for many years, have recommended the establishment of a complete reporting system.

As early as 1920, the U. S. Livestock Sanitary Association adopted a resolution recommending that livestock sanitary authorities in the States gather reliable information about the health of livestock and all outbreaks of communicable diseases and forward it to the U. S. Department of Agriculture for consolidation and publication.

Recommendations were made to correlate this information with the work of diagnostic laboratories throughout the United States. An extensive survey was conducted in 1947 by the Committee on Morbidity and Mortality on the needs for such information, the ways in which it might be gathered and distributed, and the Federal, State, and private agencies that might participate.

In 1949, the Committee again reviewed the situation, and recommendations were made and adopted by the association to assist the U. S. Bureau of Animal Industry in establishing a system for the collection and dissemination of statistics on livestock diseases, in cooperation with State livestock sanitary officials.

In November 1955, an Animal Disease Reporting System was established in the Agricultural Research Service. The Special Diseases Eradication Section of the Animal Disease Eradication Division has the responsibility for the collection and correlation of all animal disease morbidity and mortality information available to the ARS; to establish means for collecting the information from other agencies of the Federal Government and the States; and to disseminate it in systematic reports designed to be of maximum assistance to the livestock and related industries, practicing veterinarians, and agencies of the State and Federal Government concerned with the prevention, treatment, control, or eradication of animal diseases.

Starting with the month of January 1956, monthly Animal Morbidity Reports have been prepared, and about 1250 copies distributed each month to State veterinarians, ADE Division Stations, State health officials, deans of veterinary schools, associations, libraries, publications, etc., and within the Department's Washington offices. Foreign distribution includes Argentina, British Honduras, Canada, Denmark, England, Japan, Mexico, Switzerland, Union of South Africa, Thailand, Turkey, Australia, and Jamaica.

For the first few months, the report included only the morbidity status of brucellosis, tuberculosis, paratuberculosis, scabies, vesicular exanthema, anthrax, equine encephalomyelitis, scrapie, dourine, glanders, and bluetongue. Starting with the June 1956 report, the format of the report was revised. A more attractive arrangement was designed, a better species breakdown was developed, and rabies and hog cholera were added to the list of diseases covered. Later the report was again revised, and dourine and glanders were removed.

In addition to statistical information, material of general interest has been included. To this end the following reports have been added to the Animal Morbidity Report: "Outbreak of Virulent Newcastle Disease"; "Outbreak of Aujeszky's (Pseudorabies) Disease in Cattle"; "An Example of Diseases Encountered at Public Stockyards"; "Recent Outbreaks of Psoroptic Scabies in Wyoming"; "Psoroptic Cattle Scabies Diagnosed at Public Stockyards"; "Psoroptic Mites Recovered From a Horse in Colorado"; "Tuberculosis in a Horse"; "Recent Developments and a Brief History of Cattle Fever Tick Eradication Activities"; "Reports of Vesicular Stomatitis"; etc. Information concerning the screwworm eradication program, reports of animal diseases in foreign countries, and visual aids recently released have also been featured.

A new monthly report was initiated in January 1958 when "Consolidated Reports: Animal Diseases at Public Stockyards and Establishments" was prepared and distributed. This is a consolidated report of the diseases encountered at the 59 public stockyards operating under ADE Division inspection and at the 507 slaughterhouses operating under Meat Inspection Division inspection. This report provides a ready reference to enable program sections, regulatory officials, research workers, and others to more accurately estimate the incidence of livestock diseases at a given time and over a period of time, and aids them in planning for the future by recognizing, at an early date, trends in animal disease incidence.

In addition to monthly reports, the following annual reports are prepared and distributed: "Annual Report of Cooperative State-Federal Sheep and Cattle Scabies Eradication"; "Reported Incidence of Rabies in the United States"; "Reported Incidence of Infectious Equine Encephalomyelitis and Related Encephalitides in the United States"; "The Incidence of Bluetongue as Reported in the United States"; and special Animal Morbidity Reports.

A more comprehensive system was developed to summarize the incidence of animal diseases as revealed by the cooperative animal disease reports from various States and from other available information.

Among other reports and activities, the Section compiled and issued "A Summary of the Status of the Various Animal Disease Reporting Systems in the United States."

Similar reports will be prepared in the future. Preliminary discussions with members of the Poultry Diseases Section, and Program Services Section suggest that reporting procedures to include disease reports from Poultry Inspection Plants and diagnostic laboratories can be worked out.

CATTLE FEVER TICK ERADICATION

NATURE OF DISEASE

Cattle tick fever (also called bovine piroplasmosis, Texas fever, and splenetic fever) is a specific infectious disease of cattle caused by a microparasite (Babesia bigemina) and is transmitted by ticks (Boophilus annulatus and B. microplus) from infected to susceptible animals. The former ticks infest horses as well as cattle and the latter may, in addition, be carried by sheep and goats.

The acute disease is characterized by a rise in temperature to 106° to 107° F., inappetence, and marked depression. Anemia develops as red blood cells are destroyed, and mucous membranes become pale and often icteric. Hemoglobinuria is frequent. Severe acute cases lead rapidly to prostration and death in 5 to 8 days after onset. Mortality may approach 90 percent in susceptible animals. Diagnosis is confirmed by the demonstration of B. bigemina in stained blood smears.

Mild cases show gradual recovery over weeks or months. Chronic cases occur with periodic febrile attacks, anemia, diminution of appetite and emaciation, with relatively low mortality. Cattle native to enzootic areas may develop mild, immunizing attacks as calves, while introduced cattle show heavy losses.

ECONOMIC IMPORTANCE

Cattle affected with tick fever become anemic, lose weight, give less milk, and many (particularly those not previously exposed to the disease) die. Hides are damaged by the ticks and quarantine restrictions increase the cost of shipping animals. This disease caused estimated losses of \$40,000,000 annually in the United States before it was eradicated. This estimate is based on cattle prices considerably under present prices and during a period when the number of cattle was less than now. If tick vigilance were not maintained, the disease would quickly spread into this country, resulting in losses considerably in excess of those previously experienced.

HISTORY

Cattle tick fever is indigenous in the tropical and subtropical regions of the world. The disease probably spread into the southern part of the United States from the West Indies and Mexico, apparently as early as 1796.

The nature of the disease was not understood until 1889, when scientists of the United States Department of Agriculture discovered that the causative agent was a protozoan transmitted by the cattle tick, Boophilus annulatus. This discovery furnished the first experimental proof that disease can be borne by arthropods and is regarded as one of the great achievements of medical research. The ticks transmit the protozoa to their progeny transovarially.

The first step to control the vector, B. annulatus, was to determine the northern boundary line of the infested area. The first quarantine order was issued July 3, 1889. When it became general knowledge that this tick was the intermediate but essential factor in transmission and perpetuation of this disease, its eradication was advocated. In 1906 the first Congressional appropriation was made for this purpose and an extensive eradication program was begun. The vector was eradicated from the United States by 1943, except for a narrow buffer zone in southern Texas along the border between the United States and Mexico. Reinfestation occurs there frequently because the adjacent area of Mexico is badly infested.

On April 23, 1957, cattle-fever ticks (B. microplus) were found at a live-stock market at Okeechobee, Florida, by a State inspector.

Since the last reinfestation in Florida (eradicated in 1950), cattle passing through all auctions throughout the State have been inspected routinely for ticks by experienced inspectors, and all cattle except those selling for slaughter have also been dipped. It was as a result of this routine search for fever ticks that the ticks were found. Steps were taken immediately to treat the infested and exposed herds and place a State quarantine on the area likely to be affected. Action was also taken to trace movements of animals to and from the area during the last two or three years, to place the premises involved under State quarantine, and to investigate the possible source of the ticks. In all, more than 100 ranches in 10 Florida counties were placed under quarantine.

Experienced State and Federal tick inspectors were assigned to the eradication project and more than 30 employees are now engaged in eradicating the infestation. To date, cattle on a total of eight premises in Okeechobee County, one premise each in Dade, Highlands, and Palm Beach Counties, and three premises in Broward County have been found infested. No additional infestation has been found since July 1957. The Florida Livestock Board has quarantined all of Okeechobee, Broward and Palm Beach Counties and part of Dade County.

Florida was the last State (with the exception of Texas where a narrow buffer zone along the international border is still infested) to be freed of fever ticks. The last Federal quarantine in Collier and Hendry Counties in the Big Cypress Swamp area was lifted in December 1943.

All territory in Mexico adjacent to the international boundary between Texas and Mexico along the lower Rio Grande River is tick infested, and reinfestations in Texas by ticks carried by Mexican animals illegally entering the United States occur frequently. The river, serving as the boundary, is not an effective barrier against such illegal movements. A buffer area, under Federal and State quarantines, extends from Del Rio to the Gulf of Mexico, approximately 500 miles. This zone is constantly patrolled by Department inspectors who, in cooperation with Texas livestock sanitary authorities, work diligently to reduce the introduction and prevent the dissemination of the ticks. The area under quarantine includes parts of Cameron, Hidalgo, Kinney, Maverick, Starr, Val Verde, Webb, and Zapata Counties.

The fever tick was eradicated from California many years ago. However, this State also has a common border with infested areas in Mexico, and animals illegally entering the United States reintroduce ticks from time to time.

In Puerto Rico an active tick eradication program, which has been under way for a number of years, is nearing completion. Here the tropical variety of the fever tick was prevalent, and it was necessary to treat sheep and goats as well as equines and cattle.

CURRENT PROGRAM

The cooperative eradication program, which includes inspection, quarantine, and dipping, is now confined to Florida, the buffer area in Texas, and to Puerto Rico.

In considering measures for eradicating the tick, it is evident that the pest may be attacked in two locations--in the pasture and on the host. Animals may be freed of ticks in two ways: 1) With a tickicide that destroys all the ticks, or 2) They may be pastured at proper intervals on tick-free fields until all the ticks have dropped. Dipping is the method generally used. The pasture-rotation method is more complicated and tick-free fields are seldom available.

In freeing pastures the method followed may be either direct or indirect: 1) The direct method consists in excluding all hosts of the vector from the pasture until all the ticks have died of starvation. 2) The indirect plan consists in permitting the cattle and other animals to remain on the infested pasture and treating them at regular intervals with agents destructive to ticks, thus preventing engorged females from dropping and reinfesting the pasture. All the seed ticks on the pasture, or those that hatch from eggs laid by females already there, will die eventually. Those that get on the hosts will be destroyed by the treatment, while those that fail to find a host will starve.

In the United States the only approved procedure for treating animals to destroy the cattle-fever tick is by dipping them at 14-day intervals in an arsenical solution containing 0.22 percent of arsenious oxide. The strength of the dipping solution is determined by a chemical test before each use.

Veterinarians and inspectors should be alert for ticks of Boophilus spp. not only on animals in areas along the border between the United States and Mexico, but also on routine inspections at concentration points, prior to issuing health certificates, etc. When it is suspected that such ticks may be present, the proper officials should be notified immediately, and specimens should be collected for laboratory identification.

VISUAL AIDS

- A. Film, "The Threat of the Cattle Fever Tick."
- B. Afford opportunity to observe preserved specimens of cattle-fever ticks, if possible.

REFERENCES

- A. Farmers' Bulletin No. 1625, "Tick Fever."
- B. 9CFR, Part 72--Texas (Splenetic) Fever in Cattle.

AUTHORITIES, RESPONSIBILITY AND FUNCTIONS OF COOPERATIVE DISEASE
ERADICATION (TUBERCULOSIS)

The Tuberculosis Eradication Section is responsible for the development of effective cooperative programs of inspection, quarantine, testing, diagnosis, condemnation, disposal, and sanitary procedures designed to control and eradicate tuberculosis. This is accomplished in the 48 states, Alaska, Hawaii, and Puerto Rico by the development of recommended policies, plans, regulations and procedures.

The authority for this Cooperative Disease Eradication Program was first promulgated by the Acts of Congress of 1884. That Federal Act provided for cooperation with the various States and Territories in order to effect the suppression and extirpation of communicable diseases of livestock.

The Act of 1903 extended the authority of the Secretary of Agriculture to prevent the introduction or dissemination of any communicable disease in the U. S. by providing specifically for federal inspection of livestock and the issuance of certificates for interstate movement.

The Act of 1905 empowered the Secretary of Agriculture to establish a Federal quarantine to prevent the spread of communicable livestock diseases from one State to another. It was also intended to assist the States in controlling the spread of animal diseases from certain areas.

Under Section 114a, Title 21, U. S. Code, the Secretary of Agriculture, either independently or in cooperation with States or political subdivisions thereof, farmers' associations and similar organizations, and individuals, is authorized to control and eradicate tuberculosis and paratuberculosis of animals, avian tuberculosis, brucellosis of domestic animals, southern cattle ticks, hog cholera and related swine diseases, scabies in sheep and cattle, dourine in horses, scrapie and blue tongue in sheep, incipient or potentially serious minor outbreaks of diseases of animals, and contagious or infectious diseases of animals (such as foot-and-mouth disease, rinderpest, and contagious pleuropneumonia) which in the opinion of the Secretary constitute an emergency and threaten the livestock industry of the country, including the purchase and destruction of diseased or exposed animals (including poultry) or the destruction of such animals and the payment of indemnities therefore, in accordance with such regulations as the Secretary may prescribe. As used in this section, the term "State" includes the District of Columbia and the Territories and possessions of the United States.

The Secretary may enter into a cooperative agreement with a State or States when he determines that a particular disease should be eradicated. The agreement may include the purchase and disposal of diseased or exposed animals. The term under which cooperative programs operate are included in a document known as a "Memorandum of Understanding" which outlines the respective duties and responsibility of the Federal and the State Agencies. The agreement endorses the use of uniform methods and rules and the enforcement of State laws and regulations. For many years, in the interest of uniformity, procedures for livestock disease control have been agreed upon at annual meetings of the U. S. Livestock Sanitary Association, where all States are represented. State officials are generally willing to use these recommendations as a guide with regard to tuberculosis and brucellosis eradication. The Division usually approves recommendations made by the U. S.

Livestock Sanitary Association with the exception of minor changes.

In the case of bovine tuberculosis, there has been a series of what is known as "Uniform Methods and Rules" for the Establishment and Maintenance of Tuberculosis-free Accredited Herds of Cattle and Modified Accredited Areas."

These procedures have been agreed upon by representatives of most of the States, as referred to above, at the annual meetings of the U. S. Livestock Sanitary Association and have been approved by the Division. There is no legal authority in these uniform methods and rules; however, in most States laws have been enacted which authorize livestock sanitary officials to proceed on the basis of the requirements that are stipulated in these.

As we proceed under cooperative programs we should be cognizant of our legal authority. Basically, the State officials operate under the laws of their State concerning the diagnosis of disease and quarantine and control of infected or exposed animals within the State while Federal officials are responsible for enforcement of laws to control or prevent the spread of animal diseases beyond State boundaries.

The cooperative programs are designed to provide for the interchange of information and planning that will benefit the livestock industry on both the local and national level. Thus Federal officials are commonly authorized by the State to operate under State laws and regulations in conjunction with their duties as Federal employees.

The actual operation of cooperative programs vary somewhat in different States. In some instances the State officials may be more active and assume greater responsibility for a certain program or phase of a program, while the Federal officials devote more time and attention to some other program. In most States it is arranged so that both State and Federal employees give approximately equal attention to administering the cooperative programs within the state. In such instances, Federal veterinarians are essentially carrying out State and Federal requirements in their particular area. In one state the local regulations must be enforced by State Civil Service employees only. In many States, however, Federal employees are properly deputized to act for the State.

Close collaboration is maintained with State officials to coordinate the practices and policies on a national basis that will also prove effective within the States. Constant effort is made to improve the effectiveness of operations by maintaining liaison with research workers in the Federal Government and in private and public agencies. There is maintained an interchange of information among this Section, the U. S. Livestock Sanitary Association, the AVMA, and the Public Health Service so that the best interest of the general public will be served. Interchange of information with other countries is maintained, and counsel and technical assistance is provided in the interest of improved tuberculosis eradication programs.

Educational campaigns are conducted to demonstrate the value of tuberculosis eradication in relation to the public health and the livestock industry in general. Factual information is made available to the public through the preparation of bulletins and other printed matter. Technical information and data on tuberculosis eradication are furnished for publication in current papers and magazines.

Finally, careful consideration is given to established guide lines and results achieved with a view to providing more efficient and effective results. Our goal is complete eradication of tuberculosis.

INTERNATIONAL INSPECTION AND QUARANTINE

By several Acts of Congress and by regulations which effectuate such statutes, the Animal Inspection and Quarantine Division is given broad authority and great responsibility in the protection of the livestock of the United States against communicable diseases of foreign origin.

It is also the responsibility of the Division, under appropriate statutes and regulations, to see that only healthy animals are exported and to provide for their humane handling and safe transport.

STATUTORY BASIS FOR REGULATIONS

(a) The Act of August 30, 1890 (21 U.S.C. 102-105).

1. Authorizes the quarantine of all cattle, sheep, all other domestic ruminants, and all swine imported into the United States at designated ports of entry and under prescribed conditions.
2. Prohibits the importation of cattle, other domestic ruminants, and swine which are diseased, infected with any disease or exposed to such infection within 60 days next before their exportation.
Note: Amendments to the basic statute permit the admission of cattle which have been infested with or exposed to fever ticks, from Mexico into Texas for any purpose and from the British Virgin Islands into the United States Virgin Islands for immediate slaughter.
3. Requires inspection of all imported cattle, other domestic ruminants and swine to determine whether they are infected with or have been exposed to any disease so as to be dangerous to other animals.
4. Authorizes the inspection of all animals intended for exportation.

(b) The Act of February 2, 1903 (21 U.S.C. 111).

Authorizes such regulations and measures deemed proper to prevent the introduction or dissemination of the contagion of any diseases of animals from a foreign country, and the seizure, quarantine and disposal of hay, straw, or similar materials, or meats, hides or other animal products coming from a foreign country.

(c) The Act of June 17, 1930 (19 U.S.C. 1306).

Prohibits the importation of cattle, sheep, other domestic ruminants, or swine, or fresh, chilled, or frozen meats from such animals from any country in which the Secretary of Agriculture has determined that foot-and-mouth disease or rinderpest exists.

(d) The Act of March 4, 1907 (21 U.S.C. 80-82).

Requires inspection of all ruminants and swine intended for exportation, to determine their freedom from disease and that no clearance shall be given for any transporting vessel unless the animals are certified as being healthy.

(e) The Act of March 3, 1891 (46 U.S.C. 466 a, b).

Authorizes regulations prescribing accommodations for export animals aboard transporting vessels.

IMPORTATION OF ANIMALS AND POULTRY

Regulations relating to the importation of animals and poultry are contained in Parts 92 and 94 of Title 9, Code of Federal Regulations.

Animals and poultry, which each year are brought to the United States from many foreign countries, can bring with them diseases which presently do not exist in this country - foot-and-mouth disease, rinderpest, dourine, glanders, fowl plague, and many others. They can also harbor diseases already established, such as brucellosis, hog cholera, scrapie and Newcastle disease. Thus, international inspection and quarantine efforts are directed not only against the so-called exotic diseases but also against those we are endeavoring to control or eradicate.

The Act of June 17, 1930 (19 U.S.C. 1306) requires the Secretary of Agriculture to determine the existence of foot-and-mouth disease and rinderpest in all foreign countries. When he has determined that either of these diseases exists in a country he gives public notice thereof and until such time as he in like manner determines that the diseases no longer exist in a country, the importation of cattle, sheep, other domestic ruminants or swine is prohibited.

To carry out the provisions of this statute, the Animal Inspection and Quarantine Division maintains on a current basis a list of foot-and-mouth disease or rinderpest infected countries (9 CFR 94.1). Presently, either or both of these diseases are considered to exist in all countries where the raising of livestock is significant except Canada, Mexico, the countries of Central America, the Republic of Ireland, Northern Ireland, Norway, Australia and New Zealand.

Semen from ruminants and swine in countries where foot-and-mouth disease or rinderpest exists is also prohibited entry. Studies have shown that the virus of foot-and-mouth disease may be present in the semen of bulls infected with the disease. Unfortunately, we do not have as yet procedures and techniques which would render semen safe from the hazard of foot-and-mouth disease should any be present at the time of collection. The deep freeze technique now commonly used in the storage and transportation of semen would actually preserve the virus. Thus, for purposes of administering applicable laws and regulations, we must consider semen in the same category as the donor animal.

For ruminants and swine intended for importation from all countries (except from Canada and the seven northern Mexican states), the importer must first obtain a permit from the Animal Inspection and Quarantine Division. Permits are also required for poultry from all countries except Canada. They are not required for horses and other equine stock from any country.

The purpose of permits is not for mere recording of intended importations, but to more effectively administer those provisions of the law which relate to exposure to disease in the country of origin. Thus, such factors as the prevalence of diseases, veterinary services and quarantine practices in the country of origin are considered in the issuance of permits. They also permit the Division to specify conditions under which importations may be made.

With few exceptions import animals and poultry must be accompanied by certificates of health when offered for entry. These are issued by official veterinarians in the country of origin and certify as to freedom from communicable diseases and exposure thereto during the 60 days immediately preceding shipment. Such certifications are not acceptable for cattle from countries where contagious pleuropneumonia exists, thus precluding the entry of cattle into the United States from such countries.

Certificates alone are not adequate assurance against the introduction of diseases. In the first place, the incubation period of a disease may allow a potentially dangerous "carrier" animal showing no evidence of disease to be shipped from a foreign country. Secondly, certificates may be in error because of inadequate knowledge on the part of the issuing veterinarian as to local disease conditions. There may also be indifference in the issuance of certificates, which is not confined to regulatory officials in foreign countries.

To provide for the orderly importation of animals and poultry, the principal coastal cities and various points along our international land borders have been designated as ports of entry. At some of these ports the Division maintains resident veterinarians while at others, veterinary inspection service is provided on an appointment basis.

Health inspection of import animals and poultry is mandatory by law. When offered for entry, careful physical examination is made and accompanying documents and test charts are checked. Animals not meeting the requirements upon initial inspection are refused entry and either sent back or destroyed. Those potentially eligible for entry may be held for quarantine, or other detention, pending results of tests for such diseases as brucellosis, tuberculosis, dourine and glanders.

The Department owns and operates a quarantine station at Clifton, New Jersey for animals and poultry entering through the port of New York. When importations are made at other ports, the importer must provide quarantine facilities, subject always to the approval of the port veterinarian.

Quarantine of import animals and poultry, usually from 15 to 30 days or longer, is considered extremely important in safeguarding the livestock of the United States. Adequate quarantine has taken on added significance with the increased use of air transportation. Travel time from a foreign country may run ahead of the incubation period of some diseases. This did happen recently when several shipments of game birds, apparently healthy when loaded aboard the transporting aircraft, developed symptoms of Newcastle disease after a few days in quarantine. The strain isolated proved to be a highly lethal type.

Importations from Canada and Mexico are in certain respects handled somewhat differently than those from other foreign countries. This is possible because of rather close working relationships with these neighboring countries. For example, permits are not required for importations from Canada, nor for some importations originating in Mexico. There is no quarantine of animals or poultry from Canada or for ruminants and swine from the seven northern Mexican states. There is, however, authority for such quarantine which can be used when considered necessary. All animals from Mexico are given precautionary dipping against fever ticks or scabies mites.

IMPORTATION OF MEATS AND ANIMAL BYPRODUCTS

Earlier it has been mentioned that domestic ruminants and swine are prohibited entry from foot-and-mouth disease or rinderpest infected countries. The same statute (19 U.S.C. 1306) also prohibits the importation of fresh, chilled, or frozen beef, veal, mutton, lamb or pork from such countries.

Canned meats from countries where foot-and-mouth disease or rinderpest exists, when completely sterilized by heat in hermetically sealed containers, are permitted unrestricted entry. Cured meats from such countries can come in but only when consigned from the port of entry under seal to establishments operating under our federal meat inspection system for further processing, by heat, under supervision.

Each year thousands of tons of animal byproducts, such as glands, livers, dried blood, hides, wool, and bones, are imported for pharmaceutical or industrial uses. Such products are potentially dangerous from the disease introduction standpoint. All such products are inspected at ports of entry and released without restrictions when this can be safely done; otherwise, the byproducts, as in the case of restricted meats, are sent under seal to approved industrial establishments for handling and processing in a manner designed to preclude spread of disease.

Most handling of restricted byproducts is directed against the introduction of foot-and-mouth disease and rinderpest. In the case of bones and bone meal, additional precautions are taken against the introduction and spread of anthrax.

EXPORTATION OF LIVESTOCK

The purpose of regulatory control over export livestock is to foster and maintain a healthy foreign trade by assuring that only healthy animals are sent to foreign countries. It is also necessary that export livestock be shipped in a manner which will assure their arrival in foreign countries in good condition. Thus, there are health regulations to be complied with and requirements aboard transporting vessels and aircraft as to space, ventilation, feed, water and attendants. Such regulations are set forth in Part 91, Title 9, Code of Federal Regulations.

The health requirements are those of this country. In addition, there may be requirements of the receiving country, such as additional tests and vaccinations. It is Division policy to see that such added requirements are met insofar as it is possible to do so.

Veterinary inspection is required for all animals intended for export, at the point of origin. This is done by accredited veterinarians who also conduct tuberculosis tests, when required, and collect blood samples for necessary brucellosis tests. Such tests must be made within 30 days of the date of shipment from the farm to the port of export.

All test charts and health certificates issued by accredited veterinarians must be endorsed by the Federal Veterinarian in Charge of the Department's disease control activities in the state of origin. This is because he may have knowledge of quarantines and disease conditions in certain areas which would preclude exportation of the livestock.

At the port of export the animals are reinspected by the port veterinarian, the animals identified as those covered by the health certificates, and the shipping accommodations approved. If everything is in order the port veterinarian issues his export certificate upon which Customs releases the shipment.

The matter of certifying livestock for export has served well in the expansion of our foreign trade. The need for careful attention to all details in connection with such certifications cannot be overemphasized. Foreign governments have come to depend upon such certificates and the integrity of our enforcement of regulations to provide them with healthy animals in good condition. It would be unfortunate if anything were done to cause them to lose such confidence.

BIOLOGICAL PRODUCTS SECTION

The activities relating to the production and marketing of veterinary biologics are located in the Biological Products Licensing Section and the Biological Products Inspection Section of the Animal Inspection and Quarantine Division. The Division administers the Virus-Serum-Toxin Act of March 4, 1913, which provides that no virus, serum, toxin, or analogous products shall be produced and marketed interstate unless produced under a U. S. Veterinary License. No veterinary biological product can be imported into the United States without a U. S. Veterinary Permit issued by the Secretary. No virus, serum, toxin, or analogous products shall be marketed which are worthless, contaminated, dangerous, or harmful. Conversely, these products must have merit and serve the purpose for which they are intended.

The Secretary of Agriculture, under the law, is authorized to promulgate rules and regulations. The regulations pertaining to the licensing and inspection of veterinary biologics are set forth in the CFR Title 9, Parts 101 to 123. The rules and regulations go into considerable detail for the production and inspection of anti-hog-cholera serum and hog-cholera virus. These two products are produced according to procedures prescribed in the Regulations. The regulations are in less detail for all biologics other than hog-cholera serum and virus. These products, such as bacterial vaccines, viral vaccines, antisera, diagnostic agents, and the like are usually a result of the research conducted by the individual firms applying for license to market the products. They are produced according to the manufacturer's methods of production which must be acceptable to the Division.

Certain information is required of biologics' manufacturers for Division consideration and decisions in licensing matters. This information includes:

1. An application for license to the Secretary of Agriculture. This application must list the name and address of the company, including the names of its officers, the name of the product for which the application is made, and additional information of a similar nature. The application must be signed by an authorized officer of the firm and, in so doing, the organization agrees to abide by the regulations administered under the Act.
2. Triplicate copies of blueprints and plot plans of the premises showing the location of all the buildings thereon and the nature and use of adjoining properties. The blueprints must be complete to furnish the floor plans of all laboratory rooms. A legend must be attached to the blueprints which lists the main production equipment and where located, the products produced in each room, materials used in construction, plumbing, drainage systems, and the like.

3. Methods of production and testing. This information must be supplied in outline form setting forth all detailed procedures of production and testing. An outline guide is furnished by the Division to make certain that all such information is supplied. This would include such items as:

- (a) The source and strains of bacteria or virus used for production purposes.
- (b) The composition of media for propagating bacteria and viruses, including chick-embryos and tissue culture.
- (c) The method of handling and storing bacteria and viruses used for production purposes.
- (d) Technique of inoculating production media and animals.
- (e) Period of incubation and the temperature to which inoculated cultures are subjected.
- (f) Technique of harvesting the organisms or product materials for further processing.
- (g) The chemicals added and the concentration used for inactivation and preservation. In the case of modified live or attenuated preparations, the methods of modification or attenuation.
- (h) Methods of batching and filling final containers.
- (i) In the case of desiccated products, a description of the drying process and vacuum sealing, along with a proposed procedure for moisture determination. All desiccated products should be subjected to desiccation until moisture has been removed to a satisfactory degree.
- (j) A proposed expiration date, dosage and recommendations for use.

4. Copies of labels and package literature. Labels are reviewed to determine that all required statements are shown thereon, such as the true name of the product, contents in liquid, solid or potency measurement, dosage and directions, serial number, expiration date, License No., name and address of the firm, a caution statement to destroy the container and unused contents in the case of viable preparations, storage at 45°F., and that unused contents should not be held for later use. If other information is shown on the label and package circular, it must not be false or misleading in any particular. Claims made for a product must be substantiated by appropriate supporting data.

5. Data covering research conducted by the manufacturer to demonstrate the safety and potency of a biologic. This includes safety, potency, purity, and sterility tests conducted by the manufacturer under controlled laboratory conditions. The data, depending on the biologic involved, must also include the results of experimental field evaluation.

In addition and depending on the circumstances involved, the Division may request samples of the biologic for Division testing; at other times, the Division may prescribe certain tests designed to further evaluate the safety and potency of the product which the manufacturer must conduct before final decisions in licensing are reached. In questionable and unquestionable cases, many tests conducted by the manufacturer are carried out under the observation of Division field veterinarians, whose report accompanies the test results and application for license submitted.

The Licensing Section approves and develops production and testing standards. Production standards are enforced at the time manufacturers submit their outline of production for Division approval. If any phase of production is not in conformity with standardized procedures previously found acceptable and already documented by supporting evidence, the manufacturer is so notified and the procedure changed. Minimum testing standards for a number of biologics are available in printed form for ready distribution, while for other products, certain testing procedures have been found acceptable but are not in printed form as Minimum Standards. In the latter case, the acceptable testing procedures are furnished to licensed manufacturers and other on request or they may be imposed on the manufacturer if their proposed testing procedures do not meet or exceed those which we regard as acceptable. Minimum testing standards are essential to assure the livestock raiser that the licensed biologics, which they purchase, are safe and meet or exceed established levels of potency. The development of minimum testing standards and the improvement of those already in existence will be an integral part of the activities at the Ames Animal Disease Control Laboratory.

The Animal Inspection and Quarantine Division also has the responsibility of safeguarding the nation's livestock and poultry by regulating the importation and interstate movement of animal disease organisms and vectors. This activity is part of biologics' control work because of the close relationship which exists in the two areas of operation. Determining the safety and possible hazards involved in manufacturing biologics from animal disease producing agents and the same of similar agents imported for research purposes is closely associated. U. S. Veterinary Licenses are issued for biological products and U. S. Veterinary Permits are issued for the importation and interstate movement of organisms and vectors.

No animal disease producing organism or vector can be imported into the United States without prior approval from the Department in the form of a U. S. Veterinary Permit issued by the Secretary of Agriculture. Animal disease producing organisms and vectors, once permitted entry into the

United States, to a specified person, cannot be further transported or given to other persons without prior approval from the Division. In addition, permits are required in advance for the interstate movement between research workers, educational institutions, biological laboratories, and others studying animal diseases of certain disease producing agents, regardless of how such agents came to exist in this country. This includes such disease producing agents as Venezuelan equine encephalomyelitis virus; Asiatic or highly virulent strains of Newcastle disease virus; Plasmodium berghei; Bluetongue; Scrapie; Vesicular disease viruses and others which are of an unusual or contagious nature. A notice to this effect has been distributed by the Division, and it is included in the ADE Division Manual and Directory of Animal Diagnostic laboratories in the United States.

FUNCTIONS AND RESPONSIBILITIES
OF
ADMINISTRATIVE SERVICES DIVISION

Major functions include:

1. A complete procurement management program including extensive purchasing and contracting operations for research investigations, supplies, materials, property, equipment, services and construction work.
2. A comprehensive real property management responsibility, including the acquisition, disposition, utilization, maintenance, control and accountability of real property and the engineering and design functions for an extensive construction program.
3. A complete personal property management program including the utilization, maintenance, repair, replacement, accountability, control and disposition of personal property; acquisition of personal property from excess and surplus sources; and the management of motor vehicles.
4. The records, forms and reports management, procedures services and communications programs.
5. A comprehensive management program relating to research contracts, research and regulatory cooperative arrangements, patents arising therefrom, and licenses to practice under Department controlled patents.
6. An extensive machine data processing program to meet all management and non-research needs.
7. The administrative management aspects of a program of agricultural utilization research in friendly foreign countries through the execution of contracts and grants.

The Director and his assistant are responsible for development of overall policy and procedures in the administrative services field and supervising the conduct of operations carried out in the following branches:

Procurement Branch

This branch consists of two sections:

Supply and Purchasing Section
Contracting Section

Supply and Purchasing Section

1. Provides guidance and leadership in connection with purchasing operations at the RBOs; and initiates policies and procedures governing purchasing operations in ARS.
2. Requisitions or purchases material, property and services for Washington and certain field offices. Arranges for shipping personal effects of employees to and from foreign countries.

3. Secures printing and binding and arranges for the procurement of books, periodicals, maps and newspaper subscriptions; grants emergency printing and authority to field offices.
4. Obtains photostating, blueprinting, multilithing, mimeographing, and other types of reproduction services; distributes or arranges for the distribution of instructions, orders, interpretations, regulations, directives, and other material, as ordered by the requisitioner.
5. Inspects procurement methods to assure compliance with policies and standards including determination that proper authorities are delegated.
6. Provides technical assistance to Washington, Regional Business and other ARS offices on procedures relating to functions of the Branch.
7. Determines restrictions necessary on purchases and recommends approval of purchases of restricted items.
8. Provides or obtains interpretation of laws, regulations and decisions relating to the above activities and arranges for dissemination of such information to the RBOs and program divisions.

Contracting Section

1. Provides guidance and leadership in connection with contractual operations at the RBOs; and initiates policies and procedures governing contractual operations in ARS.
2. Inspects procurement methods to assure compliance with policies and standards including determination that proper authorities are delegated.
3. Develops specifications and invitations for bids for the procurement of equipment, supplies and services not available from established contact sources and for the sale of excess property; abstracts and analyzes all bids received; either makes final acceptance or recommends bids to the Office of Plant and Operations for acceptance when necessary. Directs the preparation of all contracts issued by the Section; and directs the preparation of specifications covering a wide variety of technical, scientific and motorized equipment.
4. Develops and effects contracts incident to the acquisition and disposition of equipment and supplies; arranges for other non-personal contractual services; reviews and recommends award of service contracts when amounts exceed delegated field authority.
5. Provides technical assistance to Washington, Regional Business and other ARS offices on procedures relating to functions of the Branch.
6. Provides or obtains interpretation of laws, regulations and decisions relating to the above activities and arranges for dissemination of such information to the RBOs and program divisions.

Real Property Branch

This branch consists of three sections:

Acquisition and Disposition Section
Engineering, Design and Construction Section
Utilization and Maintenance Section

Acquisition and Disposition Section

1. Conducts surveys and makes recommendations for the acquisition by purchase or transfer of real property necessary to meet ARS needs.
2. Conducts a leasing program, including review of leasing actions taken by RBOs, and furnishes technical assistance and guidance to RBOs in space matters. Acquires by assignment space under the control of the General Services Administration and initiates request for space in Federal and other buildings. Conducts surveys and prepares estimates of space requirements in new Federal Buildings.
3. Conducts systematic surveys to determine real property needs and recommends disposition of property excess to ARS requirements, disposes of surplus real property under delegated authority.
4. Develops and prepares revocable permits covering use of ARS controlled land, buildings and other facilities and equipment, reviews requests for oil and gas leases and for right-of-way easements across lands of the Government and makes recommendations pertaining thereto.

Engineering, Design and Construction Section

1. Provides engineering guidance and assistance to ARS officials in planning and developing current and long range housing and related facility and real property requirements of ARS.
2. Develops architectural plans, specifications, and cost estimates for the construction, alteration and rehabilitation of ARS facilities.
3. Conducts investigations to establish needs for construction, alteration or repair, recommends necessary action, and provides for technical supervision in the design and construction of new facilities.

Utilization and Maintenance Section

1. Strives for optimum utilization of ARS real property and facilities through systematic inspections by Section and RBO personnel. Reports findings to higher authority and recommends appropriate action.
2. Directs periodic surveys of ARS Quarters for the purpose of establishing fair rental rates.
3. Develops maintenance standards and schedules designed to prevent the deterioration of ARS real property. Maintains close liaison with operating officials, RBOs and directs and conducts inspections to insure compliance with established standards.
4. Conducts studies and develops standards for effective heating, lighting, ventilation, air conditioning, acoustical treatment, electrical convenience outlets, etc.

5. Directs the installation and operation of a uniform real property accountability record system.
6. Within the Washington area arranges office and equipment moves; initiates requests for alteration, repair and maintenance of space; and arranges for facilities and services such as telephone installation and directories, identification cards, building passes and parking permits.
7. Provides technical assistance to Washington, RBOs and other ARS offices on Section procedures relating to functions of the Branch.

Personal Property Branch

This branch consists of two sections:

Mechanized Equipment Section
Property Control Section

Mechanized Equipment Section

1. Develops and conducts an effective management and utilization program on motor vehicles and heavy mechanized equipment for ARS.
2. Initiates and conducts studies for determination of need, including types, sizes and use of automotive, and miscellaneous light and heavy equipment, including aircraft; acquires and disposes of motor vehicles and aircraft.
3. Prepares equipment cost estimates and justifications for use in budgetary submissions, and allocates passenger carrying vehicles based on budget estimates.
4. Develops motor vehicle and heavy mechanized equipment management and operation procedures. Plans and conducts utilization surveys. Coordinates vehicle management activities of the RBOs.
5. Analyzes periodic vehicle operation reports on all ARS vehicles to determine effectiveness of utilization and disposal or reassignment of vehicles. Develops and supervises the establishment and maintenance of an effective motor vehicle record system.
6. Acts as liaison between Department and ARS in connection with motor pool studies conducted by GSA; acts as liaison between GSA motor pool officials and ARS in obtaining transportation for Washington area personnel, both locally and in field travel status. Is responsible for the efficient functioning of the Beltsville Motor Pool System. Reviews and analyzes motor vehicle accident reports, recommends disposition of cases and collaborates in settlement of claims. Reviews and analyzes requests for authority to park Government-owned motor vehicles at private residences and makes recommendations for approval or disapproval.

Property Control Section

1. Recommends over-all ARS policies, plans and programs for the establishment and maintenance of an effective ARS personal property management system.

2. Develops and issues procedures governing the acquisition use standards, utilization and disposition of personal property, including the establishment of a uniform inventory and accountability system.
3. Exercises technical direction and coordination of personal property activities of the RBOs and other units of ARS.
4. Maintains accountability and control records for property in areas served by the Washington office and directs taking of annual property inventories; directs disposition of property in these areas and processes all property documents for property acquired, reassigned or disposed of.
5. Assists program divisions on inventory problems and other property matters including the acquisition of property from excess sources; conducts periodic property utilization surveys of Washington and Beltsville offices.
6. Develops over-all ARS policies and procedures governing the acquisition, utilization, disposition, and accountability control of agency books. Maintains inventory of agency books assigned to locations served by the Washington office and directs taking of annual inventories.
7. Furnishes the Beltsville and Washington Finance Offices property data for use in maintenance of the General Ledger Accounts and assists in reconciliation of the property records with the General Ledger Accounts.
8. Reviews claims for damage to private property submitted under the Tort Claims Act and collaborates in settlement; acts as liaison with the Office of General Counsel in such matters.

Records and Forms Management Branch

This branch now consists of the four following sections:

Records Disposition Section
Procedure Service Section
Forms Management Section
Current Records Section

The functions of this Branch are presented in accordance with proposed revisions of the functional chart which it is expected will be accepted formally in the near future.

The functions of these new sections are:

Records Management Section

1. Directs an agency-wide records management program based on established agency and Departmental Requirements. Conducts continuing surveys of the program and makes recommendations for its improvement.
2. Develops records disposal schedules and other control techniques and provides for the review, analysis, modification and creation of records maintenance and disposition systems.
3. Furnishes technical assistance and guidance in records management. Collaborates in determining agency needs and in coordinating records management activities throughout ARS.

Forms Management Section

1. Directs an agency-wide forms management program based on established agency and Departmental requirements. Conducts continuing surveys of the program and makes recommendations for its improvement.
2. Develops and maintains control over forms and provides for the review, analysis, modification and creation of all agency forms and form letters.
3. Furnishes technical assistance and guidance in forms management. Collaborates in determining agency needs and in coordinating forms management activities throughout ARS.

Reports Management Section

1. Directs an agency-wide reports management program based on established agency and Departmental requirements. Conducts continuing surveys of the program and makes recommendations for its improvement.
2. Develops and maintains control over reports and provides for the review, analysis, modification and creation of reports.
3. Furnishes technical assistance and guidance in reports management. Collaborates in determining agency needs and in coordinating reports management activities throughout ARS.

Operations Section

1. Supervises an agency-wide communications system based on established agency and Departmental requirements. Conducts continuing surveys of the system and related services and makes recommendations for improvement.
2. Develops and establishes controls over communications, maintains central files including stocks of current AMs and TCs, provides messenger and other services to Washington Offices.
3. Compiles reports on records holdings (annual), penalty mail (quarterly and annual), indispensable records (semi-annual) and other reports required of the Branch.
4. Furnishes technical assistance and guidance in communications management. Collaborates in determining agency needs and in coordinating communications management activities throughout ARS.

Procedures Services Section

1. Directs agency-wide system for the issuance of agency policies, authorities and operating procedures. Conducts continuing surveys of the system and related services and makes recommendations for improvement.
2. Develops and maintains control over the issuance of all administrative instructions. Develops procedures for certain administrative operations upon request or when operations are not the primary responsibility of

a single office. Reviews and provides clearance service for all material for publication in the Federal Register.

3. Furnishes technical assistance and guidance in procedures management. Collaborates in determining agency needs and in coordinating procedures management activities throughout ARS.

Research Agreements and Patents Branch

This Branch is not organized into Sections. It:

1. Develops and prescribes procedures to be followed in the negotiation, drafting, and processing of Research and Marketing Act contracts, cooperative agreements and Memoranda of Understanding and assists in the accomplishment of the foregoing.
2. Reviews the foregoing instruments to verify that they and related documents are developed in accordance with existing law, regulation, and procedure and that the interests of the Government are fully protected.
3. Acts in an advisory capacity on problems that arise prior to, during, and after negotiations are completed and problems that arise during the course of the work and interprets data and information regarding regulations, laws, procedures, and policies applicable to research contracts, cooperative agreements and memoranda of understanding.
4. Develops procedures for the processing of applications for licenses to practice under Department controlled patents for ARS and all other USDA agencies.
5. Reviews applications for patent licenses, handles administrative work required to obtain licenses, prepares licenses, and maintains complete file of Department patents and licenses to practice thereunder.
6. Obtains clearances as may be necessary on instruments handled by the Branch from the Offices of the General Counsel, Budget and Finance, Plant and Operations, and others.

Data Processing Branch

The functions, activities, personnel, property and funds of the Machine Tabulating Unit were transferred to the Administrative Services Division from Budget and Finance Division effective December 16, 1957. It is being reorganized into a Branch and it is expected that approval as to its organization will be obtained before June 1958.

It is proposed that this branch consist of two sections:

Planning and Development Section
Operations Section

The Planning and Development Section will:

1. Conduct surveys and studies dealing with the overall programs of ARS to determine the feasibility, potentiality and need for data processing systems.
2. Develop and prescribe data processing systems and supervise the installation of prescribed systems to develop the necessary information desired by the various programs.
3. Maintain familiarity with the work of the various programs and assists ARS offices in implementing data processing systems and procedures with their work as occasion requires.
4. Consult with and provide technical assistance to ARS officials on techniques, methods, and costs of data processing systems.
5. Maintain working relationships and liaison with agencies and officials of the Department, other government agencies, and commercial firms in connection with special problems in the above field.

The Operations Section will:

1. Provide a comprehensive rapid data processing operation for ARS activities.
2. Plan, and develop procedures, statistical and accounting controls, time and cost records, and operational deadline due dates, which are necessary in providing data processing service.
3. Maintain proper inventory of supplies and equipment to meet data processing demands of the Service.
4. Maintain working relationships with program and administrative officials of ARS and other government agencies and with commercial firms in connection with operating techniques and methods of data processing operations.

Foreign Contracts and Grants Branch

This is a proposed Branch and is still in the formative stages of development. It is pending approval as to organization. Most of the responsibilities and functions below are now being conducted by the Division. It will not be organized into Sections.

This Branch will:

1. Develop and recommend over-all policies, plans, programs, standards and procedures required in conducting a program of agricultural utilization research in friendly foreign countries by contracts and grants.
2. Plan and furnish administrative direction and leadership of both the domestic and foreign aspects of the program including the development, negotiation, evaluation, execution, and administrative supervision assuring compliance through review and analysis of foreign contracts and grants designed to increase the use of United States Agricultural products abroad and complement domestic utilization research programs.

3. Establishes necessary measures to assure legality of contracts and grants.
4. Collaborates with and maintains close working relations with officials of ARS, Foreign Agricultural Service, Office of the General Counsel, other Department Officials and Embassies of foreign countries.

Resume of Functions and Responsibilities
Of
Budget and Finance Division

Major functions include:

1. Development and coordination of requests for funds to finance the Agricultural Research Service's activities.
2. Presentation of such requests and additional explanatory material to reviewing authorities in Department of Agriculture, Bureau of the Budget, and the Congress.
3. Execution of the budget as approved by passage of appropriation act, including allotting funds, maintaining necessary accounts and auditing transactions for compliance with numerous laws and regulations.
4. Reporting, in financial and narrative terms, on the status of funds and progress of operations, in the form of recurring reports and non-recurring reports in response to specific requests.

The Director and his assistant are responsible for development of over-all policy in the budgetary and financial field and for directing the conduct of operations carried out by four branches as follows:

Budget Development Branch

The Budget Development Branch has four sections as follows:

Research Section
Regulatory Section
Reports Section
Administrative Section

This Branch is responsible for the following:

1. Arranges for annual submission to the Administrator by program divisions of their estimated fund requirements for the conduct of programs.
2. Reviews such material for submission to Administrator and assists in determinations of the amounts to be allowed and authorizations required.
3. After amounts have been determined by Administrator, prepares the necessary material for submission to progressively higher levels of review as listed below:
 - (a) U. S. Department of Agriculture
 - (b) Bureau of the Budget
 - (c) Congressional Appropriations Committees

4. Arranges for conduct of hearings and appearance of ARS program personnel at such hearings.
5. Arranges for correction of testimony given before Congressional Appropriations Committees.
6. Develops explanatory statements on the effects of Congressional action in the House and Senate on the appropriation request for ARS.
7. Prepares or reviews for accuracy and appropriateness all correspondence having budgetary implications relating to programs of ARS.
8. Obtains and analyzes material as necessary and develops special reports to respond to requests for budgetary information on ARS programs. Such reports are usually prepared at the request of members of Congress, Congressional committees, farm organizations, and others interested in the work programs of ARS.
9. Prepares a monthly summary report for the Office of the Secretary, primarily in narrative form, reflecting progress, including statements of selected recent accomplishments.
10. Through the use of rapid data processing equipment, maintains information on all regularly appointed personnel of ARS to reflect changes in salary liability and for use in preparation of monthly and periodical tabulations of such data to meet various requests for such information and to assist in preparation of the annual budget estimates.

Allotments and Control Branch

The Allotments and Control Branch has two sections as follows:

Allotments and Apportionments Section
Control Section

This Branch is responsible for the following:

1. Determines availability of funds for allotment to each ARS Division Director, and for transfers, advances, or reimbursements to other Government agencies, and based on such analysis prepares allotment documents to make funds available.
2. Makes necessary arrangements with other Government agencies for financing certain work of the Service by transfers, advances, reimbursements, or other special funds.
3. Administers the distribution to operating divisions of special funds, appropriation limitations, and other authorizations.

4. Maintains continuing review of allotments, apportionments, obligations, and expenditures to prevent deficiencies, establish reserves and transfer free balances to other operating divisions.
5. Furnishes to the Department and Bureau of the Budget financial plans for the fiscal year involving estimates of monthly, quarterly and annual rates of obligations, expenditures, and employment.
6. Justifies, as necessary, any deviations occurring from such estimates.
7. Prepares appropriate justifications for releases from budgetary reserves imposed by the Bureau of the Budget.
8. Prepares monthly reports for the Administrator, the Budget Bureau, and the Congress reflecting rates of use of funds, balances, and progress in achieving budgetary and financial plans.
9. Reports regularly on the status of any special limitations and authorizations.
10. Develops formulas and procedures for the proper assessment against program funds of administrative management and information expenses of the Service.
11. Develops all rates for reimbursable services under which collections of approximately \$10,000,000 are made each year.

Fiscal Management Branch

The Fiscal Management Branch has three sections as follows:

Accounting Systems Section
Fiscal Procedures Section
Technical Assistance Section

This Branch is responsible for the following:

1. Develops accounting systems, taking into consideration all necessary laws, regulations, principles and standards and the need for furnishing of reports to program divisions, the Administrator, the Department of Agriculture, Bureau of the Budget, Treasury Department, and Congress.
2. Prescribes and installs cost accounting systems, including that for the Working Capital Fund at the Agricultural Research Center.
3. Assists program divisions in the development of internal financial systems for the control of funds and for development of internal reports for the division concerned.
4. Issues regulations and procedural instructions covering the preparation of payrolls, including all necessary preliminary documentation such as time and attestation reports.

5. Issues regulations and procedural instructions for the examination of vouchers in ARS Finance Offices.
6. Consults with and provides assistance to program and administrative divisions of ARS on their financial problems, contractual functions and relationships and special funding operations.
7. Evaluates and recommends for approval proposed delegations of authority with respect to travel and station expense.
8. Gives assistance to ARS officials, research advisory committee members, experts, consultants and collaborators on their travel problems.
9. Advises and gives assistance to ARS employees in the making of complicated determinations concerning foreign travel.
10. Reviews reports of Internal Audit staff on the financial aspects of ARS programs.
11. Reviews reports of fiscal irregularities of ARS employees and makes recommendation as to fiscal liability to be assessed or other appropriate action to be taken.
12. Provides or obtains interpretations of laws, regulations, and decisions relating to all of the above activities, and arranges for dissemination of such information to all ARS personnel affected thereby.

Financial Operations Branch

The Financial Operations Branch has four sections as follows:

Coordination and Review Section
Fiscal Reports and Analysis Section
Washington Finance Office
Beltsville Finance Office

This Branch is responsible for the following:

1. Provides technical coordination over and reviews periodically the financial work performed in the Finance Sections of the four RBO's.
2. Maintains through accounting records over-all controls on all ARS funds and the apportionments, allotments, and administrative subdivisions of such funds.
3. Analyzes, evaluates, and consolidates financial reports and statements from the six operating fiscal offices of ARS.
4. Handles nominations of certifying officers, bonding of employees, and financial aspects of various allowances for employees stationed abroad.

5. Through the Washington Finance Office carries out a complete administrative accounting and fiscal operation for all ARS activities in the Washington-Beltsville area, including the processing of payrolls and vouchers, maintenance of necessary accounting records and reporting on status of funds.
6. Through the Beltsville Finance Office carries out a complete fiscal and cost accounting operation for the Working Capital Fund (a business-type activity) covering reimbursable service operations of about \$3,000,000 annually for all activities of ARS and other Federal agencies at the Agricultural Research Center.

FEDERAL MEAT INSPECTION AS RELATED TO ADE AND PREVENTIVE PROGRAM ACTIVITIES

The Federal Meat Inspection organization consists of over 3,000 meat inspectors and veterinarians. These are located in over 500 cities and towns throughout the country and conduct inspection in approximately 1300 slaughtering and/or processing establishments. The inspector in charge of each station, of which there are about 140, has been delegated full responsibility to carry out the provisions of the Meat Inspection Regulations in the area under his supervision. He receives general supervision in the form of a periodic survey of establishments by assistant directors from the Office of the Director of the Meat Inspection Division.

The Washington organization of the Meat Inspection Division consists of the Office of the Director and eight staff offices, each having responsibility for a certain part of the total meat inspection program. These staff offices are Animal Foods Inspection, Inspection Facilities, Inspection Procedures, Trade Labels, Army Contract Services, Special Projects, Chemical Control and Biological Control. There are four assistant directors in the office of the Director who although their headquarters are in Washington operate from an office which is located within the area for which they have responsibility. These areas correspond generally to the Regional Business office areas established by ARS.

Federal meat inspection is authorized by the Meat Inspection Act and has been in operation for over 50 years. The Meat Inspection Act authorizes the Secretary of Agriculture to issue such regulations as are necessary to carry out the provisions of the Act. Briefly, these provisions are designed to assure wholesomeness of meat and meat products which are used for human food and to assure that such products are truthfully labeled when distributed from inspected establishments. The Act provides jurisdiction over meat and meat food products moved in interstate or foreign commerce and when an establishment obtains Federal meat inspection, the inspection service covers all products produced by the plant regardless of whether they are distributed interstate or exported.

There is nothing in the Meat Inspection Act, Import Meat Act, and Horse Meat Inspection Act which provides for the control of animal diseases that may be present in domestic food animals. For many years veterinary meat inspectors have furnished assistance to those engaged in animal disease eradication control activities in a great many ways. In some cases there was not a realization on the part of meat inspectors or ADE control officials that the meat inspection employee was not conducting ADE activities under the authority of the Meat Inspection Act.

Probably the most important way in which veterinary meat inspectors aid animal disease control programs is by removing sources of infection as animals are brought to slaughter.

The control over condemned product in federally inspected establishments combined with rendering procedures and a high standard of sanitation maintained in these plants results in infectious material being handled in such a manner that it no longer constitutes a threat to other animals.

Veterinary meat inspectors frequently report disease conditions which are found on ante-mortem and post-mortem inspection giving sufficient information so that the disease control officials can locate the origin of the diseased animal and take appropriate control action. Veterinary meat inspectors also provide services such as supervising the cleaning and disinfecting of trucks which have been used to haul animals infected with an infectious disease. In performing this service it should be clearly understood that meat inspectors are acting under delegated authority from the ADE Division, since this area of work has no connection with the meat inspection responsibility.

Personnel Division Functions

- I. Develops and recommends policies and procedures on the recruitment, utilization and compensation of ARS personnel.
- II. Develop personnel programs in accordance with established Civil Service Commission, Department and ARS policies.
- III. Conducts the operations of the personnel program assigned to the Personnel Division in accordance with law, policy and regulations.
- IV. Advises with the Regional Business Officers on their responsibilities for personnel management functions.

Organization Planning & Program Development Staff

I. Organization Planning:

1. Conducts studies for the purpose of ascertaining and evaluating the efficiency of functional alignments of organizational subdivisions of ARS.
2. Develops and recommends new or revised organizational alignments.
3. Analyzes organizational changes recommended by program leaders, and evaluates the efficacy of such recommendations for use by the Administrator.
4. Develops functional organization charts for all authorized organizational subdivisions of ARS.

Employment and Placement

1. Develops and recommends policies and procedures on the recruitment and utilization of ARS employees.
2. With the Department and Civil Service Commission develops qualification requirements and Civil Service examinations for positions of importance to ARS.
3. Recruits and appoints personnel to meet the needs of ARS programs.
4. Processes the promotion, transfer, retirement and other types of personnel actions in accordance with Civil Service and Department rules and regulations.
5. Conducts and advises on other activities related to the recruitment and employment of personnel, such as career promotion programs, leave, hours of duty, retirement, reduction-in-force, etc.

Classification and Compensation

1. Develops and recommends ARS policies and procedures on position classification, and wage and pay matters.
2. Classifies positions in ARS to their appropriate title and grade.
3. Conducts audits and reviews of positions to determine the accuracy of the position description and the grade and title of the position.
4. Participates with the Department Office of Personnel and Civil Service Commission in the development of position classification standards.
5. Reviews wage board jobs and assign to their appropriate title.
6. Consults with program officials on unusual pay problems such as, overtime pay, standby pay, night differential and holiday pay.

Employee Relations

1. Develops and recommends ARS policy on the evaluation of employee performance, employee grievances, and conduct and discipline.
2. Counsels and advises with program officials on personnel problems involving performance, conduct, health, etc.
3. Counsels with employees on their personal problems which are adversely effecting or has a potential adverse effect on their performance or conduct in their work situation.
4. Counsels with employees on appeals, grievances and complaints.
5. Develops plans for evaluating employee performance, and gives general guidance to the administration of the performance rating plan.
6. Reviews reports of alleged misconduct and requests investigations as appropriate.
7. Reviews investigation reports and recommends disciplinary action.
8. Obtains medical advice on the mental and physical fitness for duty of employees who are less than satisfactory because of health problems. Recommends action on such cases.

Incentives

1. Develops and recommends policies and procedures for effecting an ARS incentive awards program.
2. Develops and promotes the incentives awards program, and processes the suggestion and performance awards.

Training

1. Develops and recommends policy on the training and development of ARS personnel.
2. Develops and promotes training programs in ARS.
3. Works with and advises program personnel on training needs, programs and methods.

Safety

1. Develops and recommends policy on safety for ARS
2. Develops and promotes safety programs in ARS
3. Works with and advises program personnel on safety matters.

ACCIDENT PREVENTION IN ADE AND AIQ

Relatively new and sometimes dramatic hazards capable of producing injuries in ARS include highly toxic chemicals, flammable and explosive solvents, radiation, and animal diseases. These are in addition to the common hazard such as cuts, falls, strains, and bruises which have always existed to some extent in our laboratories, offices, shops, fields, and highways.

We have had very little reported disability due to toxic chemicals, explosions, and animal diseases other than brucellosis. ARS has never had a reported injury which was the result of radiation, even though we work with highly radioactive isotopes and use electron microscopes and X-ray machines. On the other hand, we average about 375 disabling injuries each year from common accidents causing cuts, bruises, and strains. Vehicles, of course, are a serious hazard to everyone who drives or walks. From the above, it is obvious that our accidents and injury record is not a true indicator of the hazards that exist in ARS. Apparently, most of our scientists are well trained and know how to do their dangerous work safely. Our more unskilled employees doing ordinary tasks are having most of the accidents.

Direct costs of accidents (such as medical, disability, and death benefits) amount to an average of over \$230,000 per year for ARS employees. (Chart 1) Indirect costs exceed direct costs by a ratio of at least, two to one, or an estimated 461,000 per year on the average. This latter tremendous sum is not even generally recognized as a cost since it does not appear on any budget or accounting sheet. It shows up, however, in reduced efficiency, time lost in investigating and reporting accidents, training new employees and the like.

Accidents are reported for two reasons: (Chart 3)

1. To provide compensation.
2. To prevent recurrence.

Reports should be accurate and complete in order to show clearly what happened. They should be made without delay so compensation will not be held up and so corrective action can be taken at once to prevent recurrence.

Vehicle accidents are one of the most serious hazards in ARS. Of three people who lost their lives in service-connected accidents in ARS during the last three and one-half years, all were killed in vehicle accidents.

ADE does about 40% of all driving done in ARS. AIQ does about 2%. (Chart 4) The last person killed in ARS on the job was a brucellosis technician, killed in a vehicle accident. This chart (Chart 5) shows the number of miles driven by Divisions for each accident. Obviously there is room for improving the driving records of both ADE and AIQ.

Very few vehicle accidents result from mechanical failure - less than 5% according to the records. Furthermore, most accidents happen during daylight hours, on good roads and in good weather. It is the human factor that causes vehicle accidents.

Vehicle accidents can be reduced in number by training our drivers to drive safely. A driver must not only know how to drive safely - he must make a habit of safe driving. He must also know how to drive defensively. Defensive driving is anticipating what other people on the road MAY do and being prepared for it. It is the only protection a good driver has against unskilled or irresponsible drivers that he meets on the road. Using good manners on the road not only helps prevent accidents but enhances the reputation of the Service and your Division.

In summary we can say that well-trained employees have fewer accidents than those who do not know how to do their jobs well. The cost of accidents and injuries is much higher than the cost of accident prevention. Accidents can be reduced in frequency and severity by a good system of accident reporting and corrective follow-up. The success of any safety program can be measured by the degree of participation by its employees. ADE has an especially important vehicle hazard that can be reduced by intensive training in defensive driving.

One of the best tools for giving safety training and developing an interest in safe operating conditions is the safety meetings. Special meetings on accident prevention, while worthwhile are not necessary. The subject can be included on the agenda of other operational meetings and need take only a small amount of time.

MANAGEMENT RESEARCH AND ANALYSIS STAFF

"The Management Research and Analysis Staff is organizationally a part of the Office of the Executive Assistant Administrator. The primary function of the Staff is that of doing research and developmental work on policy, procedure, methods and systems for the purpose of improving management. It also provides staff assistance and advice to the Executive Assistant Administrator and other ARS officials in matters of administrative management."

POLICY: ITS PURPOSE, DEVELOPMENT, AND ACCEPTANCE

Frank H. Spencer, Executive Assistant Administrator, ARS -- As Executive Assistant Administrator, Mr. Spencer is responsible for the management activities of the Agricultural Research Service and, in association with the Administrator, Deputy Administrators, and Director of the Institute of Home Economics, for the overall program of the Service. Within the management organization are included the Administrative Services Division, the Budget and Finance Division, the Personnel Division, the Management Research and Analysis Staff, the Office of Operations, Agricultural Research Center at Beltsville, Maryland, and the four regional business offices located respectively at Philadelphia, Pennsylvania; Minneapolis, Minnesota; New Orleans, Louisiana; and Albany, California. The three management divisions, located at Washington and Beltsville, are responsible for policy and procedures in all areas of management. In addition, they service the programs situated in the Washington Metropolitan Area. Each of the regional business offices is responsible for management operations and for the service of program field stations located in their respective areas. The Regional Business Managers and their section heads also consult and advise with their counterparts in the management divisions on matters of policy and procedures. The Management Research and Analysis Staff has particular concern with the sponsoring and implementing of a management analysis and improvement program throughout ARS. The Office of Operations, Agricultural Research Center, is charged with custody and maintenance of the Center and with service activities for the units operating there.

DUTIES OF THE DIVISION OF INFORMATION, ARS

The Organic Act creating the Department of Agriculture in 1862 stated that the Department's duties should be "to acquire and diffuse among the people of the United States useful information on subjects connected with agriculture in the most general and comprehensive sense of that word...."

Within the Agricultural Research Service, this responsibility for "diffusing" information centers in the Division of Information. The Division discharges its responsibility by establishing policies guiding the information activities of all personnel and by employing all the tools of communications--press, radio, TV, publications, and motion pictures, to name some of them.

The Division is organized into three Branches: Current Information, Publications, and Program Services. Each Branch concerns itself with the development of specific informational products. The Division plans, administers, and coordinates these efforts so that the products of each Branch reinforce those of the others. The result is maximum impact--a concerted effort to gain public understanding of the research and regulatory activities of the ARS.

CURRENT INFORMATION BRANCH

Agricultural Research Service information that makes "news" is handled by the Current Information Branch. Newspapers, magazines, radio, and television are major outlets utilized to keep the public abreast of new developments in research and regulatory services. A monthly magazine, Agricultural Research, is prepared and issued by this Branch to serve as a source of information for both mass media outlets, and for each agricultural leaders as Extension Service specialists, county agents, and vocational agriculture instructors.

PUBLICATIONS BRANCH

The Publications Branch produces technical and popular publications. The technical publications are a medium of communication between the Department's scientists and the scientists and specialists serving agriculture in other capacities, both here and abroad. Popular publications are directed toward broad segments of the agricultural and general public. They include not only the time-honored how-to-do-it farmers' bulletins, but also leaflets and home and garden bulletins useful to farmers, gardeners, and homemakers. The aim is to make these publications concise, direct, and completely readable. Technical publications are written largely by the scientists and edited by Branch personnel. Popular publications, on the other hand, are planned, written, and edited by the Publications Branch.

PROGRAM SERVICES BRANCH

The Program Services Branch is concerned with a variety of duties--visual planning, preparation of special reports, special assignments, and coordination of information relating to regulatory programs.

Visuals are planned to supplement and enhance the production from other Branches--by illustrating publications, for example--and to carry information to the public in exhibits and motion pictures.

Special reports, concerned with both research and regulatory programs, provide specific source material. They are geared to a fast-changing agriculture and provide agricultural leaders and specialists with background information designed to help them do a better job of public service. In many cases special reports represent the first publication on a subject in layman's language.

Regulatory programs--generally Federal-State campaigns directed toward the eradication or control of a dangerous agricultural pest or disease--are served by this Branch to gain public understanding and support. Of necessity, most campaigns bring the Agricultural Research Service into direct contact with the people who live and work where control measures must be taken, and regulations enforced. The success of these campaigns depends upon the kind of cooperation that can be expected only from an informed public. Information specialists assigned to regulatory programs serve in the field as operations staff members. They produce information materials and also coordinate support from the entire Information Division.

OTHER DUTIES

In addition to these many Branch responsibilities, the Division provides direct service to the administrative staff of the Agricultural Research Service. This service includes planning and guidance in relation to the informational aspects of overall ARS programs, and the development of special informational materials to aid the administrator and his staff in explaining and supporting agency plans and policies before Congress and various public groups. On request, the Division develops specific informational material relating to the Agricultural Research Service for the use of the Secretary of Agriculture, members of Congress, and other governmental leaders.

The Division is responsible for answering inquiries from the public. These average 300 a day. Many are answered by publications. Others are answered by specially prepared form letters. This work greatly reduces the correspondence load on the scientists and administrators of the Agricultural Research Service, and it forms a vital personal link between the agency and the American people.

THE REGIONAL BUSINESS OFFICES

In looking at the Regional Business Offices and their relationship to other units of the Agricultural Research Service and its administrative "environment" in general, it might be well if we divided our consideration into three parts. First, their origin and development and their growth both in size and in the scope of their responsibilities; second, their structure; and, third, the type of services they render.

I Origin and Development

The regional business offices were established formally by Dr. Shaw with the issuance of Administrative Memorandum No. 101.1, Supplement 30, dated May 27, 1955; just about three years ago. That memorandum designated the location of the four regional offices -- Albany, California; Minneapolis, Minnesota; New Orleans, Louisiana; and Wyndmoor, Pennsylvania. The Albany and Wyndmoor offices are located in the laboratories of the Western and Eastern Utilization Research and Development Divisions, respectively, and the Northern and Southern offices have rented quarters. In that memorandum, also, the states within each region were delineated.

The final paragraph has a statement of policy with regard to the regional boundaries which has served as the guide in quite a few of the decisions which have been made. Dr. Shaw said "In approving ARS regionalization plans, the Department indicated that all ARS business activities should conform to the regional boundaries." In accordance with that requirement of the Department, ARS has adhered to the regional boundaries - without an exception which I can recall in the Eastern Region.

The operations of the regional business offices were begun on July 1, 1955, with an almost overwhelming workload and few personnel; lots of problems and few of the answers. Initially, we were concerned with purchasing, property accountability and all the related activities we call Administrative Services and the keeping of the financial records and payrolling virtually all field employees other than those in the former BAI units. So far as personnel was concerned, our activities were limited to "servicing" the field units of the former Bureau of Entomology and Plant Quarantine and the Bureau of Agricultural and Industrial Chemistry. Lest anyone think we felt this authority too limited, I'll hasten to add that it was the middle of the summer and folks were being hired in droves by the various field activities for a month, a week, a day and even for a few hours. The methods used for employment varied considerably as did the procedures for informing us. Consequently, every day was pay day for someone and we just tried to get around to every employee once every two weeks! Gradually we were able to cope with most of these problems though we still experienced "growing pains." As you perhaps recall, we began payrolling the employees of the "livestock" branches on about January 1, 1956 and undertook the actual preparation of these payrolls six months later.

Delegations of authority in the fields of classification and employment were made first on a very limited basis and gradually increased until now the regional business offices have classification authority for all positions through GS-11 with responsibility for making recommendations on most of the higher graded positions and for employment actions through grade GS-13.

Quite aside from the day-to-day record keeping and other housekeeping functions of personnel, there is the broader and, we believe, the more significant field of personnel management. The importance of establishing close working relationships with all employees is now well recognized. What is not nearly so well known is how this can be done. There is much that we in the RBO can do to help you in this area, but it takes a lot more than mere techniques or programs. First of all, each one of us should be deeply concerned about every employee under our supervision. When this is so, the results can be -- and usually are -- astounding. Without it, no amount of effort can produce significant results of lasting value. We are always glad to hear from supervisors who wish to increase their effectiveness in the field of employee relations and have at times been able to offer suggestions which have been helpful.

Increasing emphasis is also being placed on such matters as training and safety. New and practical promotion plans are being developed in all divisions of ARS and will be effective by the beginning of 1959. These programs will not be simply statements designed to improve the morale of an employee; nor even intended solely to benefit us as individuals, they are major steps in the development of a more effective, a more productive Agricultural Research Service. Through them it is hoped we shall insure that we shall have more highly trained and better educated men and women who can more efficiently carry through our programs. You here are participating in one of the best examples of one of the training activities which will become available to ARS employees when these plans are in operation.

Just one further word before we leave the Personnel field. The key "personnel officer" in any organization and at all levels is the supervisor. I sometimes think there are no duties so onerous or assignments so difficult or tedious that they cannot be carried out adequately and with good spirit if the supervisor is able to provide the incentive and leadership required. The poorest personnel "program" can be effective and the best ones fail if the supervisor is or is not equal to the situation. The personnel folks in the RBO's and here in Washington are specialists in their field but their most important function is that of supporting or "backstopping" the supervisor. They can in many instances relieve the supervisor of tasks which interfere with his operating job. We have a responsibility for doing certain things for supervisors as well as for helping them to do effectively those things they must do themselves. We are very conscious of these roles of both the supervisor and personnel technician and any programs we develop or actions we take will be done with this concept of the supervisor's role as our base.

Beginning about January 1, 1957, the personnel, procurement and accounting functions of the Plum Island Animal Disease Laboratory were transferred to the Eastern Regional Business Office and we very quickly became aware of the unique and perplexing problems with which the folks at that station are confronted.

This process of expanding the authorities delegated to the regional business offices is still continuing. On July 1, 1957, for example, we began the billings and collection work for Meat Inspection and Animal Inspection and Quarantine Divisions. With this change, we are now handling virtually all fiscal activities in the field except the payrolling of the fee-test veterinarians.

This does not mean there are no payrolling, accounting, procurement or personnel activities in the field stations. There is a lot of work in those areas being done in field offices and included in our major objectives should be: first, the development of the closest possible coordination between those offices and ours under the present procedures; and, second, a critical review of those procedures to assure that we are getting the job done with maximum effectiveness, a minimum of duplication of effort, and at the lowest possible cost.

In Administrative Services our activities likewise have been expanded. I imagine most of you are familiar with the activities of the RBO's in the records management field through the visits of the records experts to the State offices to install the new filing system which your Division has developed. Also, the real property officers are on the job in each region and that program is getting under way.

If you have ever been responsible for taking an annual physical inventory, you were doubtless not unhappy to learn that our records were converted to IBM operation and that the preparation of property cards and the typing of the annual inventory is now a thing of the past. Each of the business offices is arranging with field units for the taking of the physical inventory at the most convenient time of the year and has provided a listing of all property chargeable to the station. Of course, it will still be necessary to locate each item of property so that certification can be made that it is still on hand, but from the numerous comments received it is apparent that the new procedure makes this a much less time-consuming task. In addition, we should soon be in a position to make use of the electronic machines to serve better the needs of program units by providing quickly listings of property when needed for management studies such as replacement schedules, upgrading of property; i.e. selling the oldest or poorest unit wherever it is located when new items are purchased rather than considering only the ordering office when selecting the unit to be sold, and for many other purposes.

While we are speaking about property, I would like to say just a word concerning automotive vehicles. In the Eastern Region we have about 700 automobiles, station wagons and trucks. Last year these vehicles were driven a total of over seven and a half million miles. Inevitably, there were a number of accidents, some of which we feel could reasonably have been avoided. The greatest loss we suffer in these cases is not in money or even in the unavailability of the vehicles as inconvenient as that may be. The injury or, as in one case, the death of a valuable, highly-trained individual whose services are badly needed is the type of loss we can least afford, to say nothing of the human values involved. You men will have responsibility in controlling the use of vehicles and I would urge that you do everything you can to see that they are always in first class mechanical condition and that the drivers are competent and physically qualified to operate them. Also, it seems to me if we could get our folks who drive cars to show the same courtesy as they do even when hurrying along a crowded pavement we would be a long way toward reducing the number of accidents.

There are approximately 1,400 employees of our Region who, as part of their duties, operate Government vehicles.

Under regulations issued by the Civil Service Commission in March 1956 all these operators must be licensed to drive by ARS. The issuance of driver's permits is no longer considered a routine task. For example, a new permit must be issued every three years only after the employee qualifies physically and his previous driving record demonstrates his capabilities and judgment as a safe and responsible driver.

This, then, is a picture of the beginning and growth of the RBO's. With minor exceptions we are now fully staffed and have been given substantial delegations of responsibilities and authorities. Consequently, we might look for a few minutes at these management units and what they do.

II Structure

The chart which you have in front of you will provide you a better picture of the RBO's in their present state of development than I can give. Perhaps the most important point illustrated is that we have three "regional" officers in addition to the business manager. The significance of this is the fact that there are available in each RBO four key employees whose responsibility it is to be concerned primarily not with the day-to-day operations in our office but with the problems which arise throughout the entire region.

Not only are solutions sought for these problems, but the situations which give rise to them are explored with a view to removing the cause. Sometimes, of course, our suggestions can't be used because of circumstances of which we are not aware. We still have a great deal to learn about the various programs and their particular needs. I sometimes think if we could have Roscoe give us a "short course" on ADE, Jim on AIQ, and all the other administrative officers on their respective Divisions we could reach the point where we shall be rendering fully effective service to the field units a whole lot more quickly than we shall otherwise. However, quite a few instances have occurred in which we have been able to make some contribution along this line. These have ranged from rather far-reaching proposals which require study and clearance by the Administrative Divisions here in Washington to relatively simple things which nevertheless solved an annoying problem.

For example, take the payment of indemnity claims for your Division. In the ERBO we pay about 25,000 claims a year and we do not have the largest number. That distinction belongs to Bill Edwards and his folks in Minneapolis. When we began this work we soon found that we were getting letters in almost every mail asking that we identify these checks for those who received them. From the tone of these letters it was evident that many of the writers were more than a little upset so we were in the unenviable position of sending a man some money and getting him angry with us at the same time! By the simple device of having the Treasury Department agree to print "Animal Indemnity" on each such check, these letters have virtually ceased. We save a considerable amount of time by not having to trace checks and prepare replies but the important thing is that we have been able to correct a situation which was creating poor public relations and making your work in the field more difficult.

We are now exploring a further step to expedite payment of these claims. As you perhaps know, the checks in payment of these claims are prepared by the Treasury Department based on schedules of payment prepared by us. We are currently working with the Disbursing Officer in Philadelphia to determine the feasibility of preparing our schedules for indemnity payments on a form with chemically treated carbon paper. If this can be done the information on our schedules can be transferred by a heat process directly to the checks. This will eliminate the need for typists to copy information onto checks and avoid the possibility of errors arising in the process.

Each of the Regional Officers recognizes that his primary concern must be with the problems which arise in the field or develop in the course of our working with the field units. Consequently, you should feel free to bring matters to our attention or ask for guidance in the areas in which we operate. We do not consider these requests as an extra burden or unwelcome intrusion in the flow of paper work with which all of us are confronted. On the contrary, we believe these to be our main duty and the measure of success we have in meeting these needs is largely the measure of the value of the regional business office.

III Services Rendered

In some quarters I might hesitate to pose these questions but I feel I can try it here - What is the end product of all this and what can the RBO's do for you in the field?

Now that I look at these questions, I hope I can cope with them! First of all, we must go back to the primary objectives in establishing the regional offices which were: (1) to relieve program people of administrative detail so they could give more time to their professional duties, and (2) to expedite the business activities of ARS. In the course of pursuing these objectives other benefits have developed in perhaps varying measure. There has developed a better understanding in ARS administrative units of the problems in the field and the circumstances and situations which give rise to those problems. Also, the RBO's have been the means through which a closer association between the personnel of field program units and those handling their administrative activities has been achieved. The mutual understanding and appreciation of the other fellow's views and problems which has been developed is having and will continue to have a profound and highly satisfying effect in all areas of administration. And, finally, the establishment of the RBO's has opened the door to a coordination of activities between ARS units and the interchange of information and experiences which will most certainly work for the betterment of all. While we are speaking of this, I must mention the relationships which have been developed between the RBO's and the Division administrative units; with Roscoe Morgan, with Jim Shook, "Hutch" and all the rest of their staffs. On this point, I can only say if the progress made here has been as satisfying to them as it has been to us, we are well on our way to building a close-knit, effective team which will be a credit to ARS and the Department.

I should like to add a word here concerning the training program for field administrative personnel which your Division has encouraged. A few weeks ago we had at the ERBO 15 of your field people together with representatives of the other control and regulatory Divisions.

For three days we reviewed the various management areas and, I believe, were able to establish a closer and more effective working relationship. We profited a great deal from these sessions and have had letters from quite a few of those who participated which suggest that they, too, feel the time was well spent. I know we were delighted to have these folks with us and appreciate the fine cooperation of the program divisions in making such a meeting possible.

In addition to the duties which are implicit in the delegations outlined above, we can do provide a variety of services. In procurement, we attempt to find better sources of supply and simpler ways of meeting your needs. The blanket purchase order, a convenient, work and time-saving device, has grown from a few issued for tires and tubes so that these need no longer be stocked in attics and cellars by your state offices to about 125 covering a wide variety of items. Units in your Division and others frequently call our attention to new situations where this means can be used to provide an answer to their need for the prompt delivery of recurring low value purchases.

In cooperation with the heads of field units, the use of field purchase orders, Standard Form 44, has been expanded considerably in making purchases generally less than \$25.00 in value so that now they represent more than 50% of the orders issued in the Eastern Region. This, too, has greatly reduced the problems which arise in meeting day-to-day needs.

Our increasing acquaintance with folks in the field on their own "home ground" is revealing more and more situations where we can be of help. I might add that it has been most gratifying to us to realize that with increasing frequency we are being requested to assist with problems as they develop instead of after some action has been taken which has gone awry.

The large volume of our purchases has made us acquainted with many suppliers all over the region and enables us to locate hard-to-find items or recommend equipment to meet special needs. For example, the feed mill which Bob Priode of the Beef Cattle Station at Front Royal purchased to solve his problem of the custom grinding of feed led to the purchase from the same little-known company located in a small town just west of Philadelphia of a mill by the folks at Plum Island so that they are no longer dependent on commercial concerns to meet their needs for special feeds.

An attempt is made also to provide assistance in the management of ARS property. In a recent case in your Division a request for the purchase of a substantial number of file cabinets came to our attention. At about the same time cabinets were being released to us by units in other Divisions. With Mr. Morgan we arranged for their transfer in lieu of purchase and the state office was able to save about \$2,500.

In our Finance Section we not only endeavor to process the payrolls and reimbursement accounts promptly but review the latter to see if helpful suggestions in their presentation can be made. In some cases patterns of furnishing needless details in these accounts have been developed over the years. When we notice this we call the supervisor's attention to the fact that accounts can be prepared in a simpler fashion.

We are, quite frankly, delighted with the status of the billings and collections work we do for the Meat Inspection Division in another unit in this same section. Not quite a year has passed since this was delegated to the regional business offices. Prior to the assignment to us of this work the procedures we were to follow were developed and prescribed by Administrative Memorandums and the folks selected to do this work in the RBO's were given a "dry run". This helped us understand and prepare ourselves for handling the many details involved in billing, collecting, and accounting of an estimated 1-1/2 million dollars each year in our Region alone.

We are particularly happy with the close working relationship which has grown between us and the Division in this operation. Since it illustrates the cooperation which is steadily developing between the Division offices and RBO's it might be helpful to review it with you.

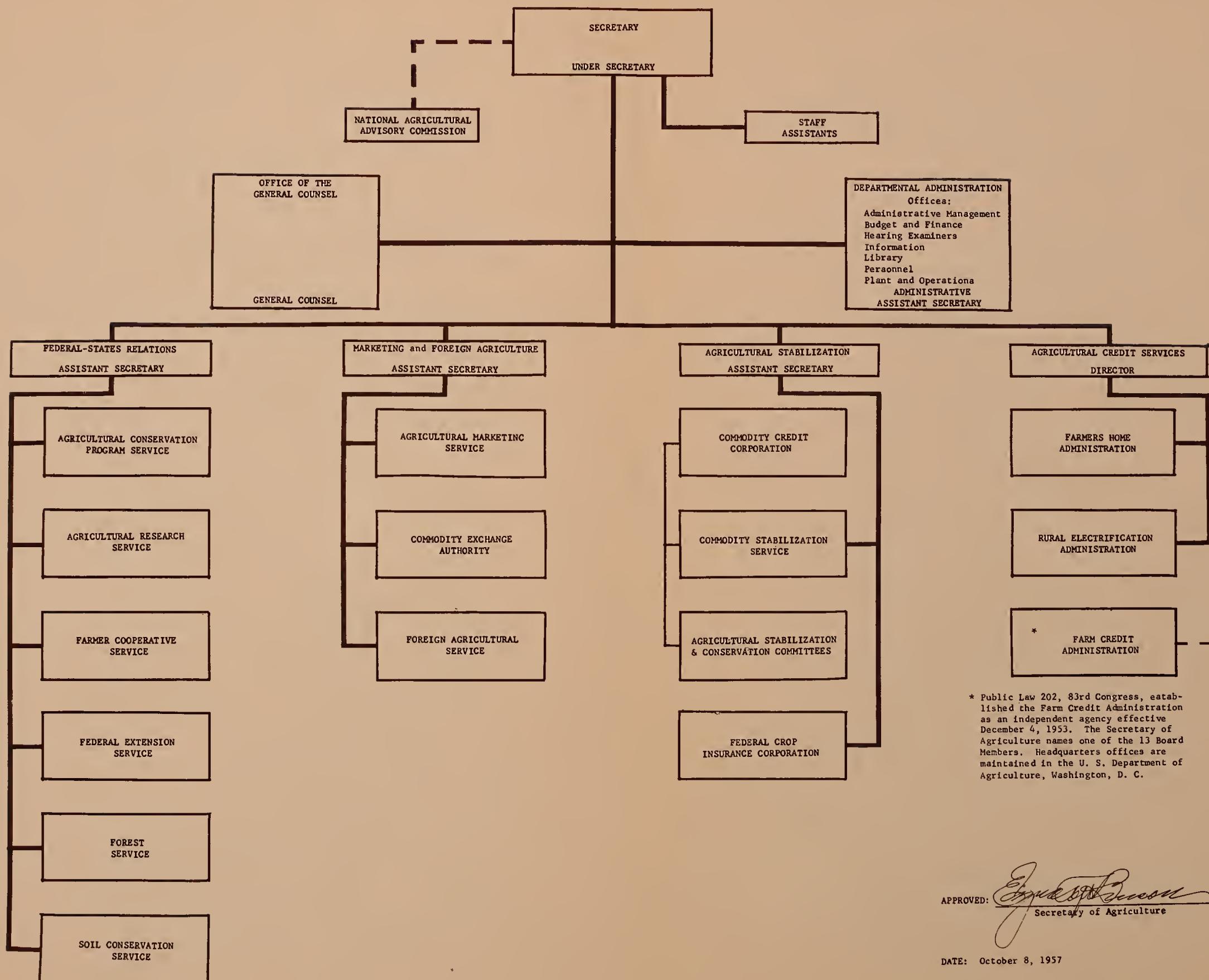
In our Region, an average of 1,200 bills are prepared and billed each month for the reimbursable overtime services of the Meat Inspection personnel. As opposed to the very large establishments in Omaha, St. Louis, and Chicago, there are numerous small packers located in many cities of the states we cover. Apparently to some, each day they can delay payment of a bill helps their operating cash situation. At least, a number of the bills we send seem to be regarded as though such were the situation. However, the RBO - Division coordination which has developed in this program has materially reduced delay on the part of the packers in paying their ARS bills.

Billings are prepared bi-weekly on the basis of overtime inspection reports submitted by the Inspector with his time and attendance report. If a bill is not paid within 30 days, we send the establishment a form letter requesting payment. If payment is not forthcoming within one week, a second and more urgent request for payment is sent. If this does not produce payment within a week, the case is reported to the Meat Inspection Division. The Division then notifies the packer that his failure to pay his bills promptly makes the furnishing of further overtime service unwarranted and such service is cut off until he has sent us full payment for all outstanding bills. This most effective lever operated by the Division has helped us to reduce initial follow-up action to 12% of the bills issued, and the additional follow-up to only 3% of the bills issued, a figure most commercial concerns would envy.

The regional aspects of our personnel program which have been pretty well covered earlier are being expanded as rapidly as possible. For instance, you may recall if you see copies of our "Administrative Notes" that we now offer a retirement counselling service of which quite a few employees avail themselves.

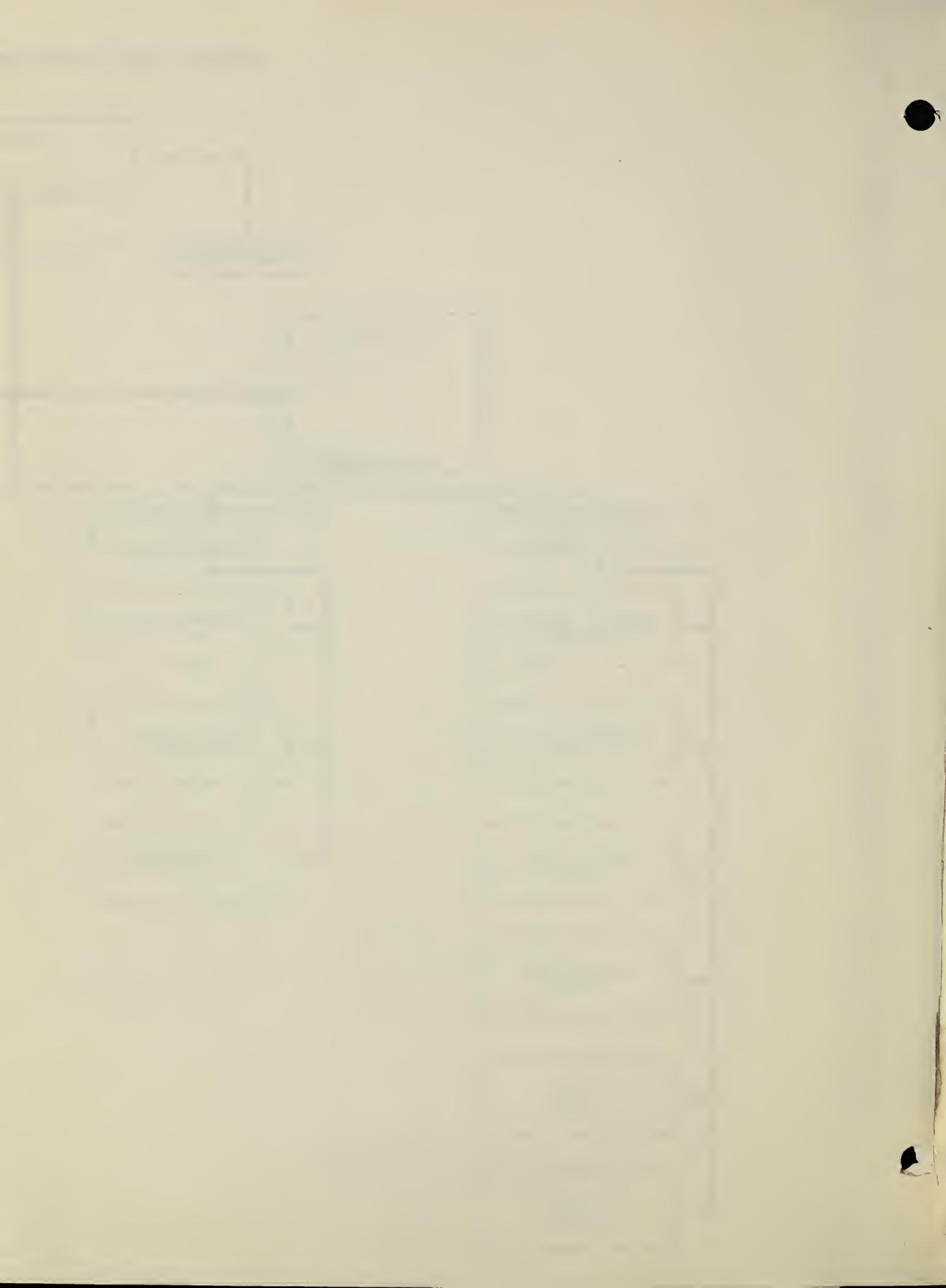
This, then, is the story of the regional business office. Perhaps some of you will wish to raise questions concerning the information presented or on some other phase of our operations. If so, I'll do my best to answer them though I'll start by saying if you accept the common definition of a specialist as "one who progressively knows more and more about less and less," I'll ask you to consider the plight of the business manager who is a generalist and thus in the position of steadily knowing less and less about more and more.

UNITED STATES DEPARTMENT OF AGRICULTURE

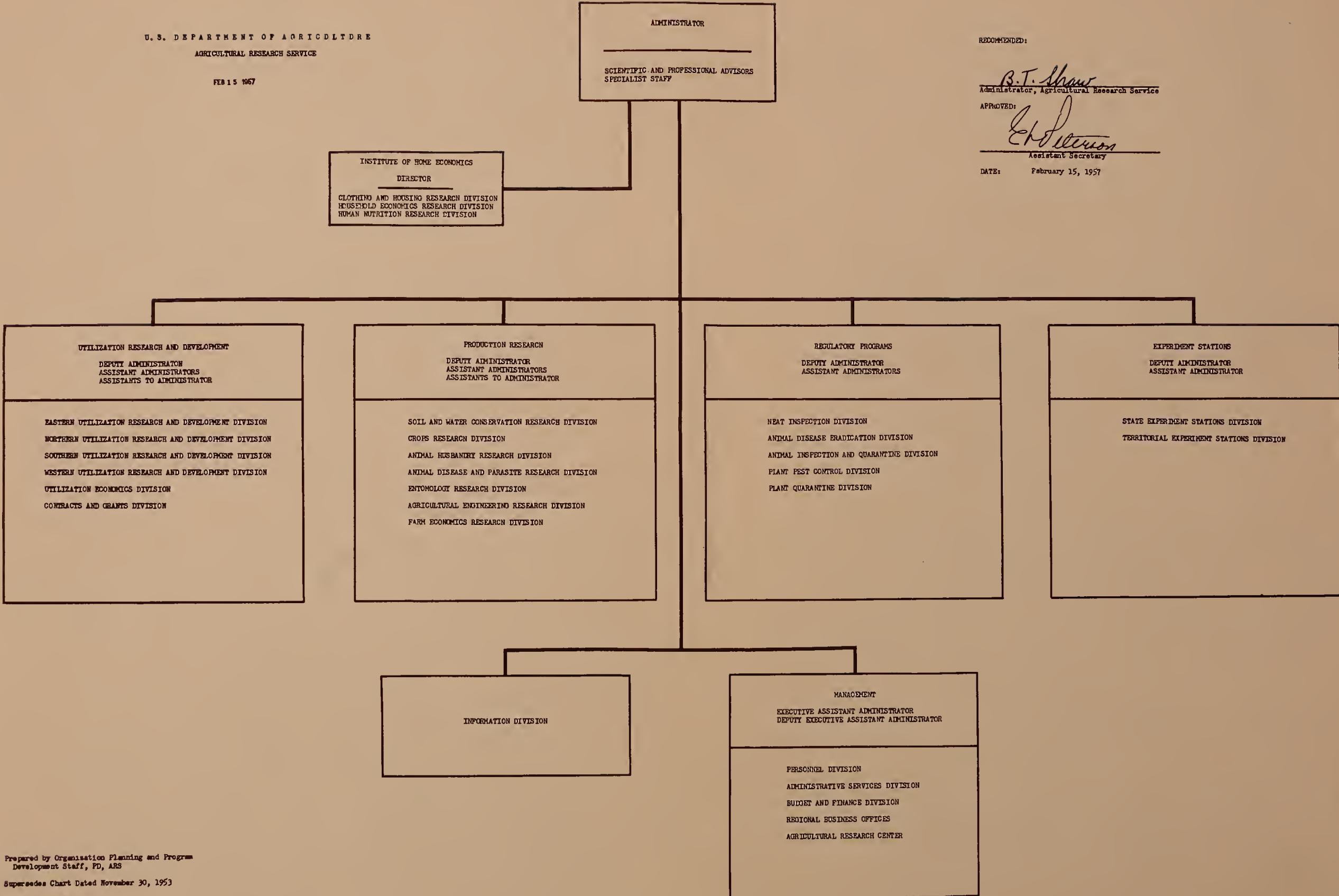


APPROVED: *Ernest G. Brooks*
Secretary of Agriculture

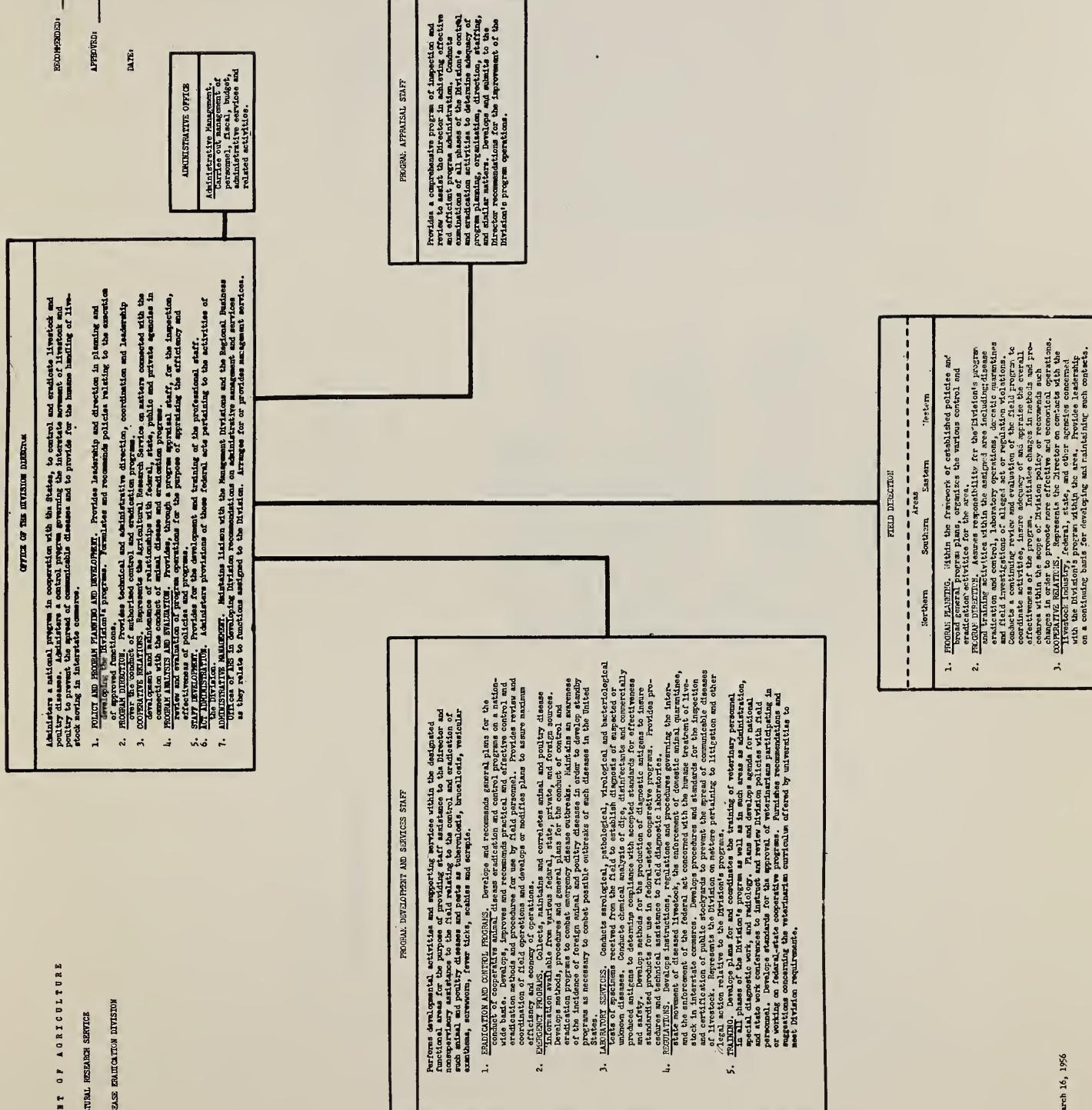
DATE: October 8, 1957



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AGRICULTURAL RESEARCH SERVICE
FEB 15 1957









REGIONAL BUSINESS OFFICES

Distribution of Functions and Responsibilities

